THE

EGYPTIAN ∴ PYRAMIDS:

AN ANALYSIS OF

A GREAT MYSTERY.

BY EVERETT W. FISH, M. D.

SECOND EDITION

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THE SEA
MEMPHIS
Heliopolis magna
Dendera
Karnak
Menephtæum
THEBES
Luxor
Remeseum
THEBES
Memnon
Medeenet Haboo
Hermonthis
Contra-laton
Pilithyas
Omboi
1st Cataract
Elephantine
Syene
Isl. of Philæ
Gertassee
Tafa
Bayt-el-Welee
Dakkeh
Koortee
Essebona
Amada
Aboo-Simbel

TO

Adnah Knight Frain, M. D.,

AN EARNEST STUDENT, IN ART AND SCIENCE,

Whose good opinion is valued more than the acclamation of the throng,

Is this Imperfect Token Inscribed.

PREFACE.

SINCE this work was undertaken, with the view of presenting a purely scientific essay on the Pyramids, its plan has been materially changed. The range of study, necessary to develop the scientific features, has inwoven many religious coincidences, complicating the mystery of their origin, which it would be folly to cast aside.

It is not a proposition to be sneered at by the most inveterate theomachist, that the design, origin, and destiny of the Great Pyramid are theistic, although reasonably subject to negative criticism. Nor, though fashionable with most modern writers of materialistic views, does it comport with good sense and justice to underrate coincidences, which, as evidences, are opposed to our own views. But they should rather be weighed, value for value, with physical testimony; for the day has not yet come when we can either dogmatically negate the direct government of a spiritual essence, or demolish with rare *mepris* the intellectual giants, whose minds, (as broad and untrammeled as our own), have found "reason" in a divinity, and "common sense" in a revelation.

When the bases fall from the physical deductions of Kepler, Bacon, Newton, Napier, and an array of minds breaking from the shackles of past schools of thought to inaugurate new systems, but still beholding a God in the universe, then we may conclude that our views of theism and cosmogony are alone up to the level of philosophy, and consign theirs to neglect.

Prof. Piazzi Smyth may be too sanguine and over-positive in the application of Siriadic symbolisms; but the Scotchman's ken for theosophic mystery is a better guide to truth than the flippant pen of Jas. Bonwick, F. R. G. S. (London), in whose recent work there is a radical excision of such interpretations. However difficult of belief, a justly balanced mind will decide—not upon the capacity of the popular will for unbelief—but upon the intrinsic value of the evidences, in minds in which there is not a highly developed antagonism. Thus we ask the reader, even the most inveterate iconoclast, to read and study—under the influence of the broad principles of Baconian Philosophy.

CHICAGO, ILL., U. S. A.,

NOTE TO SECOND EDITION.

A few of our stalwart religious journals, including the Quarterly "BAPTIST REVIEW," of Cincinnati, while noting the historical and scientific merits of the book, do not fully recognize the "Mystery" in the Pyramid. In the calm judgment of the student, unafflicted with enthusiasm, we think the following moderate statements fulfill the conditions of a "mystery:"

1. No traditional or historic record is so ancient but that the Pyramid was then a "wonder of the world." Its incomparable size and its character as a reservoir of human knowledge, makes this forgetfulness the more mysterious.

2. Its freedom from all hieratic literature, with the exception of a single, non-graven, structural hieroglyph over the entrance.

3. Its scientific [illegible]es, though still fragmentary and obscure, are too profound for any known era of mental development.

4. Its standard of weights and measures is the probable origin of the "sacred cubit," the uncia, pound, pollicis, Cwt., chauldron, acre, yard, Oriental coins, the American gold and silver pieces—all based on a decimal scale. While the French Metric Standard is based on a curved and incommensurable line, the Pyramid system has the earth's axis of revolution for its standard.

In justice to a large body of Pyramid students who have been longer in the field than the writer, we caution the reader against giving too much weight to our opinion where it conflicts with others. The object of the work is to bring a grand subject before the masses, rather than discuss doubtful topics.

The orthography of Anglicized Egyptian words is exceedingly unsettled. For instance, the word Ghizeh may be spelled in twenty different ways

There will shortly appear more complete works upon Pyramid symbols, and hence we have left a more elaborate analysis to those who are more competent.

INTRODUCTION.

No PROBLEM of the present age so fully deserves the title—"A GREAT MYSTERY," as that which is involved in the origin and interpretation of the Great Pyramid and its lesser companions. They all, doubtless, belong to one epoch and to one race of invaders, though probably far apart in significance and destiny. They are, and ever have been, as profound a mystery to the native Egyptians* as to us, and even the discovery of the key to the hieroglyphs, so profusely traced over the innumerable monuments of Egypt, throws no light on this question. The Great Pyramid alone, amid the graven structures, is free from the stone literature.†

Like the city of Damascus, this stupendous monument has witnessed the rise, zenith and decay of empires whose armies have trodden the known world. But unlike the most aged of cities, whose obscurity was its safety, the Great Pyramid has been pre-eminent among its fellows in all ages—ever sleeping, yet unspeakably grand in the intensity of its slumber!—its waking, perchance, an instant conflict with the progressive‡ thought of four thousand years.

It is without letter or language to speak in a tongue living or dead. It was a patriarch when literature was born. Its builder is a shadow in history, its birthday a bat-

*In all history they have been a subject for discussion—having been looked upon with cabalistic awe back to the very date of their erection.

†Since the appearance of the first edition we are better able to demonstrate the surmised forgery of the inscription seen by Herodotus, as well as the menial character of his translator. The architectural hieroglyph discovered in preparing the previous edition, is wrought in the masonry, and not graven. (Fig. 49.)

‡Especially in mathematics and astronomy. Eratosthenes, Hipparchus, Copernicus, Galileo, Newton, bound a progressive development.

tle-ground 6000 years in extent. Its object is the giddy whim of some fifty different historians, whose interpretations vary with the weathercock. It was grey with the noons and nights of at least 600 years when the Pentateuch was written; it was as ancient to Moses as the Norman Conquest of England is to D'Israeli to-day. Undisturbed by earthquake, it will continue the monarch of monuments when the modern obelisk has wasted away, forgetting its own history, and trodden by the feet of a new race.

Modern science is struggling with a new element in this Pyramid. In dumb silence, it yet speaks of a wisdom so profound that the humbled disciples of Newton and Herschel shrink from it in surprise and wonder.

Very recently the freshly turned sod of Assyrian mounds gave us the most ancient landmarks of the human family, still leaving the great kingdoms of Iran and Bactria, to the northeast, involved in tradition; but in these later days the Coptic races in Ægypta, (either as subject or dominant people), throw a shadow athwart the history of the ancient world which involves all chronology and science in a tangled maze. Its dates, dynasties, fragments of history, traditions and hieroglyphics are all too snarled and discordant to throw certain light on the monuments from which its annals are derived.

This monument is peculiar. It strikes the architect as a structure built to defy the wrath of storms the wear of ages, and the hunger of fire. Nor is it strange that the student, who has soberly worked his way through Zend philosophy, Trojan relics, or the earliest twilight of Attic civilization, should rise into a higher enthusiasm when

viewing this "Stone Age," representing the most profound triumphs of human thought.

It was a new idea to the world, and its design is not yet delivered from the womb of stone, though modern doctors themselves appear in travail.

It is strange in all things.

It becomes in the earliest list the first and foremost of the seven wonders.

Whatever it may have cost to build, to destroy it would absorb the wealth of nations.

It is larger than any building or structure ever planted on earth's bosom. It is a higher pinnacle, if such proportions can be called a pinnacle, than the slender summit of the proudest temple ever built.

Its workmanship, in the interior passages, is the finest ever seen; yet amid the coarsest and rudest forms. A fine scroll and joint on some white temple front excites no wonder, but a joint of microscopic fineness between two mighty, granitic rocks, in a dark and narrow passage, amid huge forms of primitive material, is past all reason—beyond comprehension.

The Great Pyramid is different from those imitations built soon after, even in its mysterious aspects. For while their builders followed the pattern, in shape and proximate size—yet, not knowing ALL the secrets of the overshadowing pile, they fill no channel of advanced symbolism.

But more mysterious than its exterior majesty, or interior symbolisms, is the fact—fairly established—that as soon as it was completed it was sealed up by a massive coating of limestone so that no man penetrated its interior for thousands of years—not until man's cupidity led him to

force an entrance by chisel, fire, and vinegar, in search for hidden treasures.

To day this mighty child of antiquity is ragged and battered. Its beautiful casing has built more modern palaces, and its interior is robbed of much of its beauty and finish. The outside has been despoiled by the Arab—but the inside by the civilized barbarians who whack at every relic of the past with a tourist's hammer. But while they may hack away its polished walls and batter down the exquisite coffer in the King's Chamber, there is one source of satisfaction—they cannot, in ages, sensibly reduce its immense mass.

THE VALUE OF THE EVIDENCE.

In this critical day, people of broad views and general intelligence are not convinced, even of an exalted truth, by a single train of evidences. It is only by the gradual modifications of the channels of thought that propositions in social, moral or æsthetic life acquire a general acceptance.

The purpose of this little work is to present the question in such a manner that the mind may grasp the facts and judge them as we judge general history, without warp or bias. Many deductions seem unphilosophical to the writer, yet it is no more than fair to give them in their strongest light, lest we fail to do justice to those whose studies have given them a right to full hearing.

A great objection to the mathematical and chronological testimony of the Pyramid, as evidence, is, that any given structure, having proportions, halls, chambers, and angles, may be so manipulated as to yield equally wonderful results. In this way a member of the British Scientific Association reviewed Prof. Piazzi Smyth's work on the Pyramid, ridiculing the propositions and deductions of the learned astronomer. Calling for the tri-cornered hat of an auditor, he proceeded to measure it—and to the

*It was doubtless the spirit in which the Pyramid labors of Prof. Smyth were received that led to his separation from the Royal Society, even if it were not the direct cause. However, his withdrawal, referred to on the next page, was not due solely to resentment at this indiscreet exhibition before a body of scientists.

convincing of a more than human agency concerned in the erection. As observed, these may be coincidences, but, if so, they are the most remarkable that an elastic mind can entertain.

These propositions may not embrace all the "curiosities" attached to our wonderful subject. For taken in connection with the unreasonable snarl and tangle in its history; the unexplainable sealing from human sight of its interior; the quite well known views of Egypt's ancient astronomers; the before-mentioned absence of the hieroglyphics; the magnitude of its dimensions and the partial failure of the "Tomb theory"—and the Pyramid of Gizeh stands out upon the frontier of the desert as the most wonderful Mystery of the age, and the most sublime landmark in the history of man.

sport of the society, deduced therefrom some exact mathematical data.

To the credit of the Professor be it said, he indignantly withdrew from membership in the body. For such was not the place, nor hour, to treat flippantly and with sneer a great problem which has since drawn into its discussion the best minds of the scientific world; and which affects the entire field of intellectual and religious development in a startling degree.

It may be said of this member, that his sarcasm was lost on the world when it was found that his figures on the "hat" had been prepared before hand, and his deductions "cut and dried." The reader will recognize, of course, that any one may construct a building, or plan a hat, with dimensions to fit any given set of past dates or arithmetical proportions. But the question of pyramidical evidence goes deeper than this. It is required:

1st. That the structure presents data of which the "artist" is quite ignorant, or which are so advanced beyond his own age as to be entirely incomprehensible to his fellow-beings—e. g.: The rotundity of the earth, distance of the planets, and various other cosmical measures, meridians, etc.

A just estimation of the past not only pronounces the Egyptians ignorant of these things, —*ignorance crasse*— but every people on earth were thus ignorant; and farther, such relative science as there was, taught a cosmogony directly the reverse of Pyramid science.*

2d. The structure must not only give past data, but it must either by design or "coincidence" represent future events. These coincidental or prophetic symbols must

*The Hipparchian and Ptolemaic systems of astronomy represent the leading ideas of advanced thought for a thousand years B. C. Before this the Egyptians were even unable to establish a cycle.

refer only to those events which modify universal history. In the Pyramid we have this illustrated in the founding of the Hebrew nation, whose history and theocratic nature have modified every subsequent political power on earth. The Exodus, and the Birth of Christ, are also among the coincidences.

3d. The structure must not only give recognition to mathematical propositions, but it must attempt the solution of profound problems which have harassed the student for ages.

Whether the above conditions are fairly credited to the Pyramid will remain an open question, until time reveals its purposes.

As a test, however, of the position taken by the member of the British Association, we present the student with the figure on page 154. (Figure 83.) It is the plan of a structure. It is required that from its dimensions, or the manipulation of dimensions by indicated factors, a list of chronological or mathematical data is to be deduced, relating to any science or special line of history. Nor is it required that future events be figured out! With the view of assisting the student, a certain dimension has been made to represent, even to the one ten-thousandth of an inch, an important era in history. This is the period in Roman History from the founding of the city to the death of Julius Cæsar.

The only requirements would be, (a), That the events, etc., shall be of primary importance in the line of history or science represented; and (b), that coincidences shall coincide to .01 of a unit. Also, (c), that no factor shall be used that is not related either to the history or to the structure.

Few readers will realize the injustice done to the School

who are translating the symbolism of the Pyramid, in this proposition. For the most remarkable coincidences of the Great Monument are not riddles to be solved by "midnight oil," or "child-birth pain," but are startling in their distinctness. It is quite possible that they are coincidences only; it is quite possible they are not! At all events they are readily discovered.

For a further development of the nature of the evidence, let us wander from the cold, abstract study of stone to a warmer illustration, which, while less logical from its coloring, appeals more directly to the common-sense:

A teacher in Ancient History, to divide off the ages into convenient epochs, made use of certain Biblical dates. Not that all of them were absolute, but that they were relatively convenient.

Suppose that such a teacher were to travel in a strange land, and receive hospitality at the hands of some recluse or iconoclast, the threshold of whose gate has never before been passed by man. He enters a broad avenue. He finds before him a pathway lined with rare flowers, graceful foliage and curious exotics. The Old Man leads the traveler towards the distant mansion. Of a sudden he notices unique stakes set in the ground, and on them, painted figures.* Little attention is paid to this at first. But soon a smile appears on the teacher's face, as he recognizes an old friend on one of these stakes—number 2349, (supposed date of the Flood—close of the first epoch in his history class). No other idea is entertained, however, than that these figures are some common place plan of a half-crazed fossil of a gardener. But the stranger's eyes open wider, when, about a hundred feet farther on, he meets another old friend in the number 2247; (given by some as the

*Figures are given as a stranger would have no occasion to apply a measuring line to these divisions of the garden.

date of the "Dispersion"). Again the beauty of the grounds attracts his attention, when stranger things appear. First a familiar number in small figures, 1729, which is followed closely by another in bold characters, 1491. (Date of the "Exodus," and formation of the Hebrew nation). "Surely," he soliloquized, "this old man's reputation belies him. There is some significance in all this, especially if some peculiar change in the garden appear about 1500 feet further on, symbolizing the Christian era." Who can judge of the surprise and wonder when at just such a distance the pathway abruptly opened upon a most magnificent fountain! And a few hundred feet beyond, another familiar date appears on a "time post"—(the date of the Hegira of Mahomet), and the gate of the castle door is reached some 1881 feet from the fountain. But the wonder does not cease here. All through that castle—everywhere—are numbers and measures which the wanderer had made familiar to his class! In utter amazement, he turns to his rough, weather-beaten guide, and asks him whence all this intricate knowledge of the past and prophecy of the future? The old man turns to his questioner, and with eyes burning with mysterious fire, replies, "Stranger, let it still remain, as it has been, a mystery! When the time comes thou shalt know." The traveler answers—"It is no mystery—it is all a coincidence."

We will strip this scene of its fancy, its flowers, its dreamery, and we have the cold facts of that mighty structure whose study is the mystery of the age! Let us enter the portal, behold the testimony upon which to answer the question— Was it built as a history in rock—with wisdom symbolized in every feature?—or the chance creation of some ancient king whose bones have disappeared from their grand mausoleum?

EARLY HISTORY OF EGYPT.

The early history of the most ancient of kingdoms would naturally be involved in doubt and uncertainty. No satisfactory chronology has been established from the traditions or records of Egypt. If this short analysis is anything but clear, it will share the common lot of its honest companions in obscurity.

Egypt occupies the northeastern corner of Africa. It is the valley of the Nile, and nothing more. The same slow fever which has dried up Petrea and hidden Edom with a leprosy of sand, has also crossed the Red Sea and narrowed, somewhat, the fertile borders of Egypt. On the west it is partially protected from the encroaching desert by the Libyan mountains. Its remarkable fertility is annually reinforced by the phenomenal inundations of the River Nile, which rose and fell in the days of Menes as in the times of the Khedive'.

The investigation of the settlement of Egypt properly belongs to our subject. It cannot, however, be fairly treated in small compass. In full recognition of the testimony of her one historian, our own opinion, if it be of value, inclines to a short chronology.*

From the earliest period Egypt was divided artificially into three sections of somewhat uncertain boundary. The northern, including the fertile delta, was known as the Bahara. (Map on page 151.) Within it at different times were several prominent cities, and independent kingdoms. A powerful priesthood usually furnished the kings. Mem-

*Every traditional development points to an origin from some great dispersion of cognate races and dialects, and especially to an Indic parallelism—in the Turanian direction, however. Egypt is not older than India. Max Muller's estimate of Vedic chronology is certainly moderate: Chandas period, (most ancient), 1200 B.C.; Mantra period, 1000; Bramana period, 800; Sutra period, 600-200. ["Ancient Sanskrit Literature."]

phis, in ancient times, and Alexandria in more modern, have been the most important. Heracleopolis was also the seat of a kingdom. Xois, in the delta, a city of a powerful priesthood, for several dynasties maintained an independent government. The southern section is called the "Said," the "Thebais," or "Thebaid," a district once having Thebes for its populous capital. The Greek name of Thebes was Diospolis, and her kings are frequently called Diospolitan. Between Said and Bahara was the region of Vostani. The earliest kingdom in Egypt was that of "This," in the southern portion, which antedated Thebes. Its kings were known as Thinites. The Elephantine kings were powerful at an early age.

The principal sources of our information regarding the history of this ancient territory are hieroglyphics, or stone pictures on the monuments, which unfortunately are not sufficiently preserved to give correct and harmonious records. Herodotus visited Egypt about the 5th century B. C. (484), and wrote a history of the country. The Egyptian priests gave him some information, but he being unable to translate the hieroglyphics to any great extent,—and his record being largely mythical, it is not credible in all its statements. The Bible also gives many interesting notes, all of which have been corroborated by the Egyptian records. An exceedingly valuable work was produced in the 3d century B. C., by Manetho, high-priest of Heliopolis, giving the names of 30 dynasties of kings, from the founder of Thebes to the times of Darius II. But unfortunately the history of Manetho has been lost, and we only have distorted portions in the works of subsequent writers.*

Among these are Eratosthenes, (276 B.C.); Julius Afri-

*Manetho is not authority in the chronology of Egypt, on disputed points. He dates back 29,000 years—13,900 for "The Gods." We know, however, that he is in error in quite modern dates as the reign of Africanus, 26th dynasty,) so frequently as to destroy credibility in the more ancient.

canus, (300 B. C.); Diodorus, (60 B. C.); Strabo, (A. D.), and Syncellus, who lived A. D. 800. An almost illegible Tablet is preserved at Turin, on which was an astronomical chronology. Its mutilation is a matter of regret. On the temple at Abydos, or "This," there were lists of kings which aided the historian.

The Bible records refer often to events in Egyptian history, and with a correctness unparalleled among other ancient writings, where love of the mythical poorly compares with the plain chronicles of the Hebrews. But the Bible record only throws a solitary gleam into Egypt as early as 1900 B. C., (Abraham's visit). Again, while Dr. Usher's date of the Flood, (short chronology,) is 2342 B. C., the Samaritan and Alexandrian (Septuagint), versions place it at least 1300 years earlier. The Rawlinsons, radical defenders of Biblical history, incline to a liberal construction of its chronology, within the latter limit.

THE HIEROGLYPHS.

The hieroglyphs were a system of singular and rude picture writings, on tomb, monument and scroll. They remained untranslated until the discovery, in 1799, of the celebrated Rosetta Stone. This was a tablet on which was engraved a trilingual key to the symbols. They were translated into the Greek, and also the enchorial or demotic (common) alphabets. Although engraven B. C. 200, the indifference of the brilliant Schools at Alexandria covered the grand old mother of alphabets with oblivion, and even this solitary key was upturned by the foreign soldier's pick, during Napoleon's invasion of Egypt.

These earliest types of written language resembled the Chinese word representation, in syllabicism, though not in morphology. Certain natural or artificial forms became associated with relative or cognate ideas, and were adopted as a sign to represent the indicative word or syllable.

The next step was the representation of a sound instead of a syllable, although the word and syllable forms were never entirely supplanted.

Thus, Osiris, a demi-god, was hieroglyphed with two syllabic characters, *Os* and *Iri*, (Fig. 2). On the other hand Labaris, a king of This, had both syllabic and sound characters, L, A, O, B, Ra, (Fig. 3.).

Fig. 2.

Another modification followed the development of sound characters. It was the simplification of the character itself. Owing to the extreme veneration of the Egyptians for their "sacred writing," this improvement is scarcely recognized in the Nile Valley. Hieroglyphs formed after the Advent much resembled those of the early ages of Karnac and Luxor. But the neighboring nations, Hebrews, Greeks, Syro-Phœnicians, and the Edomites, probably through the necessities of commerce, profited by the picture "ideation," and developed alphabets.* The fact is, that European literature is the offspring of the Egyptian monuments. Fig. 5 gives a scheme for the origin of the Hebrew characters, and Fig. 4 one for the Greek, through Phœnicia. The engravings closely follow Sharpe. The transformation into Hebrew characters must have been very ancient or it may have been through Edom's civilization. Of course it will be understood that Egypt antedates Edom at least a thousand years.

Fig. 3.

Through Egypt came science, philosophy, and even liter-

*According to Sir Isaac Newton letters originated, not in Phœnicia, but in Edom, among the Troglodytes, or dwellers in the magnificent cave- or cliff-palaces of Petrea. Doubtless the descendants of Cush and Ham in Egypt, and of Esau in Edom both drew their earliest "ideations" from a common source, many centuries before Assyria had a literature. Edom offered incense to art, and faded; Egypt changed not, and her history dwells eternally in her monuments.

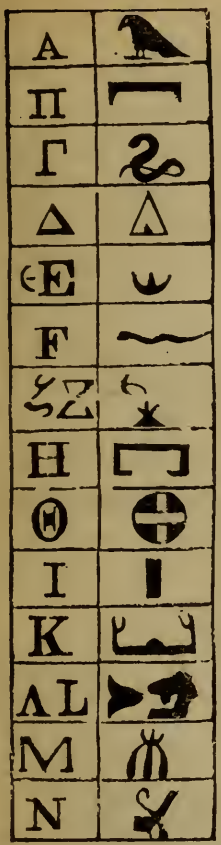
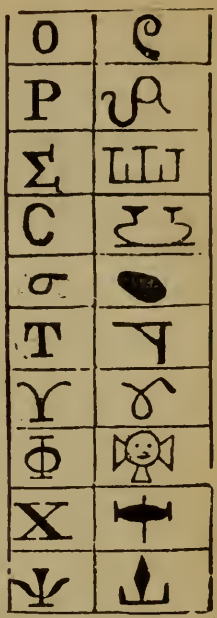


Fig. 4. Origin of Greek characters.

These shapes were certainly not a sudden transition from picture to letter, but each character passed through gradual modifications, in accord with the demands of speed and accuracy.



ature to Europe. While one age gave *form* to sound, the glorious Alexandrian epoch gave life and form to thought, and *invention* to science. One beautiful pillar is wanting in the grand vestibule of Egypt's history—Art!

But had Egypt developed art, or had the æsthetic supplanted the indestructible, then those heavy, sombre, fadeless records, in tomb and temple, pyramid and obelisk, would have crumbled on papyrus rolls, or been burned out by the torch of despot and fanatic—buried in common with the history of Iran and Edom. There is a mystery in the peculiar nature of Coptic development.

THE TIMES OF MENES.

From a careful study of the traditions of Egypt and other nations, during the 1000 years preceding the ear-

liest reliable dates, it is barely possible to locate a few prominent events. But even then the confirmation of the geological evidence, soon referred to, is necessary to make these proximate dates at all trustworthy. It is during this uncertain epoch that the Great Pyramid was built.

The era of the Rise of Thebes to the rank of a powerful city is an important landmark. This especially turns upon the fall of the kingdom of the city of This, (or Abydos), when the throne of Upper Egypt was removed to the new and populous city of Thebes. Equally significant of the rise of the new power was the Theban conquest of Memphis, by Menes. This event, as well as the establishment of the Sun-god Amun-Ra, (Fig. 6), and the founding of the memorial temples of Karnak and Luxor, peer indistinctly through the misty history of this era.

Menes was possibly a mythical person. He was undoubtedly the same as the Menu of the Hindus, and the Minos of the Greeks.* It is very remarkable that the tradition of the great Turanian, Arian, and the

Fig. 5. Origin of Hebrew letters.

*And also the Manes of the Lydians.

Hamitic races, great branches of the common origin of the human family, should thus converge to one common head, a mighty conqueror—and a wise statesman.

Menes was supposed, by Herodotus, to have ruled over Egypt 2000 B. C.; but his history is mixed with Hellenic traditions, and many such statements must be taken with due allowance. It is reasonably certain that Abraham migrated to Egypt about 1900 B. C., at which time Thebes was past her early glory, having been at least once conquered by Memphis. It is generally admitted that Menes founded Thebes.

An analysis of the dynasties preceding that during which Abraham appeared at Memphis, has resulted in a few chronologists placing the founding of Thebes at 1000 years before that event, or 2900 B. C. This conclusion is fortified by a careful examination of the alluvial deposits of the River Nile, by its never failing annual overflow.

Fig. 6. Amun-Ra, the Sun-God.

We think this resource for historical research has been slighted by Egyptologists, although the French Academicians did much to develop the subject.

It has been shown that the addition to the soil every one hundred years amounts to nearly five inches.* Over

*According to certain other explorations it was put at from 3 to 4 inches but it was in a location where the body of overflow was less than at Karnac and Luxor.

the foundation platforms of the most ancient Theban temples there is a deposit of over nineteen feet. By these centennial strata it is estimated that the city was founded or greatly enlarged from 2800 to 3000 B. C. The enlargement can be justly assigned to the close of the Thinite dynasties, and consolidation of Egypt under Menes. The agreement of different alluvial examinations, with each other and with certain other evidences, gives great probability to our deductions; and it is hoped they will receive farther examination.

Manetho, though not wholly at variance, does not fully warrant these conclusions. Unfortunately we get his history percolated through half-a-dozen later writers. Thus, he says Menes reigned at "This," over a kingdom stretching from Lycopolis unto Tentyra, building the city of Thebes during his reign; and seventeen Thinite kings followed before the removal of the throne to Thebes. Then we have from 500 to 700 years of unbroken reigns recorded by the monuments.

The Greek student will not fail to discover Grecian footprints in this statement. It might make the record of less weight to remind the reader that Attic civilization dawned some twenty-five hundred years after the times of Menes.

MEMPHIS.

The above record of the reign of 17 Thinite kings, if correct, added to the 600 years of Theban supremacy, brings us to a period when the latter kingdom succumbed to Memphis. And this conquest of Thebes was by a foreign invader, whose first achievement was to win, by force or strategy, the throne of Memphis. His name was Cheops, (Fig. 7), and he doubtless built the Great Pyramid of Ghizeh. Manetho has no dynasty which includes Cheops, (4th dynasty), and ascribes the Great Pyramid to Suphis,

of the 6th. At the time of this supremacy of Memphis, (4th) Manetho puts in king Timaus, thus: "We had formerly a king, Timaus. In his time it came to pass, I know not how, that the Deity was displeased with us, and there came up from the East, in a strange manner, men of an ignoble race, who had the confidence to invade our country and easily subdue it by their power, without a battle. And when they had *our rulers in their hands*, they demolished the temples of the Gods."

Fig. 7. Cheops, Suphis, Chemmis, or chofo. Sometimes Shafre.

Fig. 8. Sen-Suphis, Noum Chofo, Chephren. Brother of Cheops.

Note the italics! The Egyptian priest never admitted a direct conquest. We have two indications in this expression: That the conquest was a very strange one, and that the native Egyptians were not the "Yoingees," soon referred to, for the latter were but recently driven from home. However, the Hindu race may have been the invaders.

Here is a race that conquers by intelligence. The Egyptian priest, Manetho, who through hatred, never mentions Cheop's name, places the invasion at the time noted for the pyramid builders, and also for the conquest of the city of Thebes. We will note that Cheop's name is omitted, and also the name of the king of the "ignoble race." This singular conquest is corroborated by a closely parallel Hindoo tradition, to which reference will again be made. Dr. Seiss, in the "Miracle in Stone," and others, consider Timaus as the Chemmis of Diodorus, the Cheops of Herodotus, Chufu or Shofo of the monuments.

Then of course he was himself the Suphis of Manetho, —a not very plausible proposition, as two or three dynasties intervened, according to the chronicler of both. The testimony does not show that Cheops or Suphis ever was conquered. On the other hand he was a mighty conqueror himself; he and his successor, Sensuphis, or Chephren, having spread their kingdom over all Egypt and Sinaitic Arabia. Suphis reigned 63 years, and is himself represented as destroying the temples and the Gods. Cheops is always spoken of as alien to Coptic interests. Yet Mr. Bonwick says he was an Egyptian, and of an Egyptian dynasty, apparently a very bold assertion. Manetho avoids the mention of his name, and the Egyptian priests so hated him that they mentioned his name in scorn, and ascribed the building of the Pyramid to one of his shepherds, as in derision.* Again, after Timaus, Manetho leaves an unsatisfactory record from the 3d or 4th dynasty till the 6th. We can see in Timaus the last of the 3d dynasty of priestly kings, and in Cheops, an invader and the first of the Hycsos. Herodotus states: "(128). The Egyptians so detest the memory of these [the two first—Cheops and Cephren] that they do not much like even to mention their names, hence they commonly call the pyramids [the Great and the 2d] after Phil tion [or Philitis] a shepherd, who at that time fed his flocks about the place."

Now follow this up with what Manetho says of the conquerors of Timaus:—

"All this invading nation was styled Hycsos, that is 'Shepherd Kings;' for the first syllable, 'Hyc' in sacred dialect denotes a king; and 'sos' signifies a shepherd, but this only according *to the vulgar tongue.* And of these is compounded the term Hycsos; some say they were Arabians,"

*And yet the Egyptians were none of them Shepherds—evidence that Cheops was not an Egyptian.

This certainly implies that both the *Kings and their people* were the shepherds and alien. Important testimony is added in the words of Herodotus which should settle the matter, notwithstanding Kenrick* does not so understand it. The Egyptians "detested" them. Whom? Why, the shepherd Hycs or kings. The Egyptians were not shepherds. They hated the avocation. They would not wear woolen cloth; nor renounce their traditional hatred of those who would. All these expressions of dislike attach not to "vulgar" people alone, but to kings and princes. It applied to Cheops and Cephren, and as will be seen continued for 500 years or more. Then came a violent change, (pp. 34-35), a new "Pharaoh" came, and as we get down to B.C. 1700-1500 we hear of Joseph and the Hebrews†. But we are anticipating. Cheops we suppose to have reigned from 2100 to 2200 B.C. As before stated he was followed by his brother, Cephren, of Herodotus and Diodorus; Suphis II or Sensuphis, ("Sen" meaning brother), of Manetho; the Non-Shofo of Egyptologists. Hieroglyph in Fig. 8. He was followed by Mykera, (Mencheres).

The foreigners were driven out of the Nile valley, and either during or immediately after their supremacy there appeared at Thebes a line of priests or pontiff-kings, contemporaneous to this line of Memphites whom we suppose

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ποιμενος Φιλιτιωνος. [Herodotus' Egypt. §128.] "Manetho, the priest of Sebennytus, who wrote a history of Egypt in the reign of Ptolomy Philadelphus, B.C. 268, relates an invasion of Egypt by a people whom he calls Hyksos, 'shepherd-kings,' Jos. c. Apion 1. 14.', who, coming from the east reduced the natives to slavery, burnt their cities, and razed their temples. . . Of this very remarkable series of events there is no trace in Herodotus, unless we suppose that the shepherd Philition represents this dynasty of shepherd kings, and the sufferings of Egypt under Cheops and Chephren, who closed the temples and compelled the people to labor at the erection of the Pyramids, were really inflicted by the foreign invaders,"—by which, in the mind of Kenrick, from whose note on the text this is taken, is understood Philitis, a transcendental conqueror! Our opinion will appear under "The History of the Pyramid."

†Neither Abraham nor Israel's children would have gone into Egypt had other than a kindred race of shepherds ruled in the Valley.

to have been the shepherd kings: Osirtesen I, (Fig. 9), ascended the Theban throne, and it is said, erected those older and grander buildings which now mark the ruins of his capital. This seems unreasonable, however, when we reflect that Thebes had been a mighty city nearly ten centuries before, and at least 500 years before the silence of the wilderness was broken by the builders of Babylon!

Fig. 9. Osirtesen I. Title over first oval is "Sot-Nout," or King over Upper and Lower Egypt. Title over the second is "Sera," Son of the Sun. The first oval reads, "Ho-ke-ra," Ra being read last. Second oval reads O-S-R-T-S-N.

Fig. 10. Mesphra-Thothmosis. Characters read, in second oval, Mes-(anvil) [ph]Ra-Thoth (character under fowl)-M S-S. Comparison with Figs. 4 and 5 will assist translation.

Wilkinson puts the reign of Osirtesen at about the time of Joseph's arrival at Memphis, or 1706, B. C., which we are compelled to regard as an error. Sharpe places Osirtesen about 1750 also, but Joseph about 200 years later, under Mesphra-Thothmosis, (Fig. 10), who expelled the shepherd kings.

Thebes, before the time of Osirtesen, had extended her conquests from beyond Libya to the Indus, had gone into decline, been conquered by Memphis, and was now rising into new glory, possibly under the shadow and yoke of Memphis. It is quite probable that Osirtesen did extend

Karnak, rebuild Luxor, and restore the gods and shrines overthrown by the earlier conqueror of Timaus and of Thebes.

The immediate predecessor of Osirtesen I seems to have been Amunmai Thori, (Fig. 11),who is supposed to have resisted or conquered Memphis. The successors of Osirtesen, of whom little is known, appear as Noubkouri, or Amunmai Thori II (Fig 12), Meshophra, or Osirtesen II

Fig. 11. Amunmai Thori. Characters in second oval A-M-N-M-T-R. Also called A. Ch(k)ori, "Conqueror beloved by Amun."

Fig. 12. Amunmai Thori II, or Noubk(ch)ori.

(Fig 13), Meskora, or Osirtesen III (14), Queen Scemiophra (Fig 15). These names do not appear at all in the Memnon list at Thebes, but do appear on the Abydos tablet. As Abydos had been a powerful kingdom centuries before, it does not add much to the clearness of the record. It was during these reigns that Abraham appeared in lower Egypt, at Memphis, (1900 B. C.).

By some writers, the names just given as rulers of all Egypt are represented as merely High Priests. Either contemporaneously, or following these kings of equivocal power, Memphis was said to be again invaded by a foreign race, who held all Egypt under tribute. According to Manetho, they were Phœnicians, also called Hyksos or shepherd kings. There were six of them, Salatis, Beon,

Apachnas, Apophis, Janias, and Asseth, and they were driven out by Chebros-Amosis,* (Fig. 16), the successor of Queen Scemiophra! Then we are led to believe the reigns of Cheops, Kephren,† and Mykera, were followed consecutively by the Salatian dynasty, and that the race of invaders was driven out, or allowed to depart, afte r being defeated in battle, or reduced to slavery, some 500 years after Cheops. This comes near the Exodus.

There are many Indic traditions of the occupation of Egypt by migratory tribes.‡ But while they rest on uncertain foundations at best, they are more intimately connected with the earliest history of a race whose footprints are seen from Petrea to Finland, from Iberia to Ireland, and from Ceylon to Peru and Mexico. In fact, a race of Migrators.

Bonwick indulges in Indic traditions which open with the conquest and close with expulsion—in time, concur-

*Here is the difficulty in the history of the Pyramid epoch. The statement above is derived from the opinions of Egyptologists like Sharpe, being substantially derived from Manetho. Now, if the two epochs of foreign kings, viz.: The race which conquered Timaus and this Salatian dynasty—could be harmonized in one, it would assist in clearing up the record. We believe it possible and reasonable. 1. From the 2d to the 7th dynasty is involved in doubt, on account of the hatred the Egyptians bore their conquerors, destroying their records. (See p. 43.) 2. There is no well-defined Memphian succession to the Cheopian dynasty given, the change after Mykera seeming to refer to Thebes, involving the doubt expressed on previous page regarding the "Priest-Kings." 3. The second invasion, therefore, may have referred to the reconquest of Thebes and "all Egypt" by the Salatis regnant at Memphis. 4. There is but one emigration of invaders distinctly referred to—when 240,000 went out peaceably, and ancient history presents us with a traditional race to whom such a migration seems natural—the Cuthites, referred to hereafter. 5. Philistine history and tradition give us such names as Achish, ("Acthes,"—see footnote, p. 43—given by Manetho as of the second dynasty. The Semitic characters for S and Sh were identical before the use of vowel points, and Acthes could easily refer to Acthesh.), Saph, (Saophis, Suphis), Jannes, Asses, Salatis, etc., and at the same time either Cheops or his shepherd was called Philitis or Philition. It is probable that a race of Semitic invaders held possesslon of portions of Egypt from the time of Timaus to the reign of Chebros-Amosis. See pp. 41-42, "Syncellus, etc."

†In these names C and K are interchangeable. Cheops—"Keops."

‡Bonwick ("Pyramid Facts and Fancies.") says: "The shepherd story brings to mind the Hindoo narrative of some early race of India, the Pali, who were a shepherd people, ancestors of the present aboriginal Bheels, succeeding once in conquering Egypt. Their stronghold, Abaris, is in Sanskrit, 'a shepherd.'" Mr. B. should have given his estimate of the value of this tradition, and its relation to the Pyramid!

Fig. 13. Ovals of Oslrtesen II, or Mesnophra.

Fig. 14. Ovals of Osirtesen III, or Meskora.

Fig.15. Queen Sceniophra, the last ruler of Thebes who submitted to the Hyksos invaders. (Manetho.)

Fig. 16. Chebros-Amosis, who expelled the Hyksos. As he was a direct successor of Osirtesen it confirms our opinion that the Cheopian and Salatian invasions, if not identical, were closely related.

Fig. 17. Chebros-Amosis II.

Fig.18. Queen Nitocris.

Fig. 19. Thothmosis II.

ring unquestionably to the Salatian dynasty. Sharpe puts it at about 1500 B. C., thus confounding them with the Hebrews, who—at this time—existed only in prophetic promises.

Again: "We read in the Hindu Paranas of a war between the gods and earthborn 'Yoingees.' The latter were vanquished and retreated to Egypt."—*Ibid.* Mr. Wilson, an eminent writer on the astronomy of the ancients is inclined to ascribe great intellectual power to the "Yoin-

Fig. 20. Amunophth I.

Fig. 21. Thothmosis III.

gees" and believes them the pyramid builders of that age.

NATIVE KINGS.

The centre of government, after the expulsion of the last of shepherd kings, was at Thebes. Chebros-Amosis was followed by a son of same name, and next was Amunothph I, (Fig 20) who was worshipped quite as much as any of his predecessors.

Mespra-Thothmosis II (Fig. 19), enlarged the temples of Thebes and added to the glory of the kingdom. The monuments of this age are covered with inscriptions. It was

a "golden age" of hieroglyphs. It was the era of the migration of Jacob to lower Egypt, and the ministry of Joseph at Memphis. Amun-Nitocris, (Fig. 18), wife of Mespra-Thothmosis II, was an ambitious woman whose influence was felt throughout the kingdom. An eminent writer tells us she united Thebes to her kingdom by diplomacy. As we supposed we were dealing with a Theban dynasty in Mespra-Thothmosis, this part of her prowess we do not understand.

A few years subsequent to the reign of Amun-Nitocris, under Amunophth II, son of Thothmosis III, the Exodus of the Israelites occurred. Having now reached a better foot-

Fig. 22. Amunophth II.

Fig. 23. Amunmai Thori III.

ing in chronology, we close the epoch. This scarcely understandable analysis of this doubtful period is given for the reason that the mystery of its history is a necessary part of the study of the Pyramid.

Many of our names have been in accord with Sharpe, with several variations however, and different deductions. Down to the reign of Queen Nitocris there were 12 kings of Thebes, agreeing essentially with Eratosthenes, the

Tablet of Abydos, and others. In confirmation of our belief in Chofo's or Cheops being a part of the first Hycsos invaders, Eratosthenes places him after Noubkori, or Amunmai II, at which time Thebes was under Memphite rule.

The following schedule of dynasties will conclude a chapter on the most conflicting history in human annals:

No. of DYN'TY.	KINGS IN "SAID," MOSTLY THEBAN.	KINGS IN "BAHARA," MOSTLY MEMPHITE.
	17 Thinite kings of Manetho. Exceedingly doubtful.	Nothing known.
1.	Menes, 2800 or 2900 B.C.	Priest-kings conquered by Menes.
2-3.	500 or 600 years of Theban kings.	Usually under Theban dominion.
4.	Conquered by Cheops the invader.	Cheops conquers Timaus, 2200 B.C., and begins the Hyksos reigns.
	Osirtesen and successors	Cephren or Sensuphis.
	Qu. Nitocris mentioned. Without reason.	Menkere.
12	to	The Salatian Hyksos kings.
	Chebros-Amosis.	Hyksos expelled. About 1900 B.C.

ETHNOLOGY.

We have thus given as substantial a record of the earliest 1500 years of Egyptian history, as our pages and resources will admit.

This embraces the period from Menes to the departure of the Israelites, and, without a question, includes the Pyr-

amid era. Now let us take a view of the ethnological characters of the race or races at that time in the Nile valley.

There are many indications which point to Egypt as a field on which a great intellectual struggle transpired between two grand divisions of the human family,—the Mongol or Turanian, and the Semite or Aryo-Semitic. After a certain period elapses from the founding of Thebes

Fig. 24. Mongolian Type.

Fig. 25. Semitic Type.

we find the character of the people a well-developed Semitic type. But in the earliest ages, especially at Memphis, and always among her lower native castes, there is

an equally well developed Mongolian, or at least Hamitic, expression. There are many indications that the earliest settlers of both Thebes and the Delta were Asiatics, while the glorious works of Morphology exhibited at Thebes a few centuries later, in which contour begins to supplant immensity, come in contact with the still unæsthetic culture of the lower Nile. Dr. Richardson says:—"Neither in their feature nor in their complexion have the Copts the smallest resemblance to the figures of the ancient Egyptian races as represented in the tombs at Thebes, or *in any other part of Egypt*,"—an unsupported assertion, that is quite too strong. However, in the earlier epoch, even in Thebes, the graven faces were those of the modern "fellah." (Fig 24). In the oldest paintings, at Thebes or Memphis, the female face was tinged with the Tartar yellow. The fact that they would not eat of flesh on religious grounds; that they abhorred the sea; that they wore the single lock of hair; also the shape of the upper maxillary; the worship of the bull, and many traditions, point strongly to a Hindoo origin.

But the change of facial and cranial type which soon occurred, points distinctly to an irruption into the Nile valley of a race of people differing from the native settlers. It constitutes apparently a new element in Siriad history. That the original inhabitants were not lacking in culture, nor intellect, is witnessed by the power Memphis developed before the first invasion. That the struggle between the two races was a silent contest extending through ages of internal intercourse, is undoubted. Still, Memphis, which first received the invading intellect, did not take so kindly to the change as Thebes, so that those sculptures representing the Semitic type, (see Fig 25), are generally found in the ruins of Upper Egypt. Egyptologists have

not recognized this change of type sufficiently, as an historical element. Whether it was produced by the migration of a large tribe of nomads, or whether it was the earliest conquest by the shepherd kings, a race intellectually developed, with a monotheistic religion, (from Canaan,) is unsettled. The fact remains as witnessed by Rawlinson, Sharpe, and others, that the intellectual type was engrafted upon the Indo-Hamitic, and not at an earlier date than 2500 B. C., (our plan of chronology). The grandeur of this new epoch, in its peculiar line of development, can never be expressed in human language. Its nearest approach is in the mighty monuments whose lofty summits and outline majesty still defy the hand of Time.

We may hope for accuracy in one statement:—That Lower Egypt, (Memphite,) was peopled by Mizraimites—an Hamitic branch, of Mongolian type, as represented in the facial and cranial type of Fig 24.

Syncellus tells us that Egypt was governed by a threefold race of kings. The first were the Mestræi (Mezrites, Mitzraimites), as noted. 2d, The Auritæ, a "foreign dynasty of shepherd kings," who, according to Josephus, were dominant in Egypt for five centuries—an epoch which closes at 1879 B.C. Manetho recognizes these Auritæ, though he gives to them a different number and duration. The third race of kings were native Egyptians.

Analyze the early history of Egypt and see when these Auritæ must have appeared. Very few will differ from us in stating that the first conquest of Thebes was Memphite, under Cheops. Who was this Cheops of whom we have spoken?

Cheops is described as a foreigner, a man who abused the Egyptians, insulted their gods, destroyed their temples

and crushed the priesthood—later in life "repented and WROTE A RELIGIOUS WORK on the gods!"

Now who were the Auritæ? "They are said to have come from the East; to have set fire to the towns, and overturned the temples"—to have been in a state of constant hostility with the natives, "and the close of their dynasty, 500 years in extent, was in 1700."

In view of the improbability of two conquests of Egypt by shepherd kings during this period, it may be stated, with deference, that Cheops was the first of the Auritæ, and that during the 500 years of their reign, they firmly planted their race type upon the soil of the Nile valley. The erasure of the shepherd cartouches from the monuments of this era—the consequent ignorance of them by the Egyptians; their want of knowledge regarding that one Great Pyramid—all add to the value of this opinion.

It may also be stated that at this early day an important modification of the Egyptian hieroglyphics may be traced. The early Aryan and Semitic types of picture writing were distinguished by a predominance of the vowel elements; the Coptic by nearly an absence of vowels and preponderance of the consonants. But at some time during this thousand years vowels appear in such quantity as to indicate a new element in stone literature. Also the correlation between the age-characters and personal attributes of the Cheops of Herodotus and the Suphis of Manetho—the fourth Memphian and the sixth Egyptian dynasties—points unmistakably in the direction that all these finger marks of that period do—viz.: that at or just before the Memphian conquest of Thebes all Egypt was invaded by a more intellectual race of people; that they left their marks on the monumental history and the facial

and cranial angles; and on the national character of the hitherto Hindoo—and Hamitic, occupants of the valley.

Their life channel may be traced in its one grand tradition—its origin from Menes. Its Menes came from Menu of India, and it went, 1000 years later, into Attic theotechny as Minos. There is also one channel in which a search among the traditions of the invading race is confined; and that is in the stream of theosophy older than Menu, Sabeism, or the perpetual fires of Iran—the monotheism of the race *kindred* to the Abrahamic, of whom Melchi-Zedek is the earliest pontiff-king! If the philosophy of this singular history teaches us of this invasion of the shepherd kings at this time, it teaches that they were subsequently expelled, though not conquered. Still another dim circumstance adds to the mystery of this invasion. During this period some "sacred books" were "written." Not stone books but *papyrus* books—and yet the "sacred writing" was the stone hieroglyphic system! The books are lost, of course. A whole race of kings let them alone, to crumble, and so did the priesthood. How could this have been if they were about the worship of the Sun-God, or Apis the god of life? At last a king searched his kingdom for them—and though he was unsuccessful in finding them, fragments of this same work have probably been secured,* —and they read much like monotheistic doctrine. A few sentiments are given from M. Chabas' translation:

"If it may be humbling to thee to serve a wise man,

*These fragments were found in the tombs of the "Acthoes" during "2d Thinite, 5th Elephantine, 6th Memphian, ninth Heracleopolite, 11th Diospolite," (Theban), dynasties. It seems the Acthœ king, in the eyes of Egyptian priests was "wicked," that he was eaten up by alligators—after going mad; and all his Acthoite successors, with one exception, were called Nantef—so wicked were they. Their tombs are found near ancient Heracleopolis. Could the "writings" of such a race of kings be in accord

thy conduct will be be good with GOD,* for he knows that thou art among the little ones. Do not make thy heart proud against him."

"Obedience is loved by God. [Obedience to what?] Disobedience is hated by him. To hear the WORD,† to love, to obey, *that* is to fulfill good precept."

"What the wise know to be death, that is his life every day."

The importance of a close review of this age, will appear under the head of History of the Pyramid.

EGYPTIAN SCIENCE.

Before closing the chapter, we feel compelled to refer to one or two points of general interest, as describing this epoch.

In astronomy, the Egyptians were exceedingly backward, and in meteorology, and season divisions, their system was such as to convince the most skeptical, that no true system of cosmology, could originate among them.

The year was divided into three seasons: The season of Vegetation, (Fig 26) embraces four months; the season of Harvest, four months,(27), and season of Inundation four months. (28). This was in the pyramid epoch. Every month was divided into thirty days, (Fig. 26.), giving 360 days to the year. This made the year five days short and the consequence can be readily surmised. "New years" steadily receded, until the period of vegetation may have been in the middle of the inundation season, or during the dry and sandy harvest! "At some unknown time" says

with Egyptian polytheism? It may be proper to state that the Heracleopolite king who was not called "Nantef" was exceedingly popular and powerful in Egypt, and seemed to live in harmony with Coptic theology.

*This cannot refer to the innumerable deities of the Egyptians, nor to Ra, nor the translated Menes. The very signification of the term, and the doctrine implied, are foreign to Siriad theosophy.

†Does not sound hieratic or polytheistic.

one writer, "five days were added," to correct the cycle; this probably did not occur until some Greek philosopher, or Phœnician conqueror, subsequent to B.C. 1200, brought them to a realizing sense of the year's true length and corrected a most remarkable peripatesis.

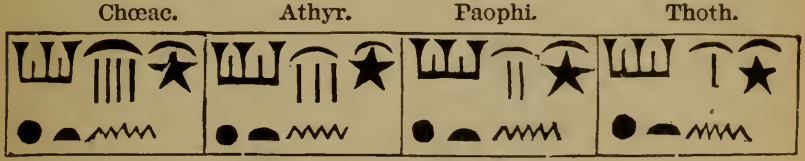


Fig. 26. Season of Vegetation.

Not until Eratosthenes, (270 B.C.), did the Egyptians know anything, so to speak, regarding the true science of astronomy. It was then demonstated by this mathematician, an ornament of the Greek School of Alexandria,

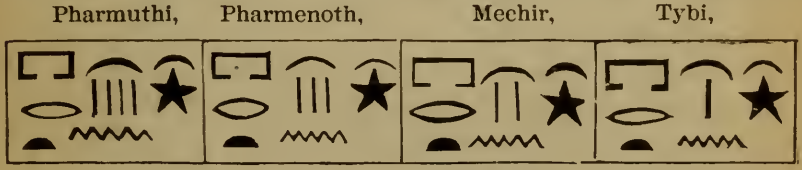


Fig. 27. Season of Harvest.

and keeper of Ptolemy Euergetes' library, that the earth was a ball. He also discovered a method of fixing lati-

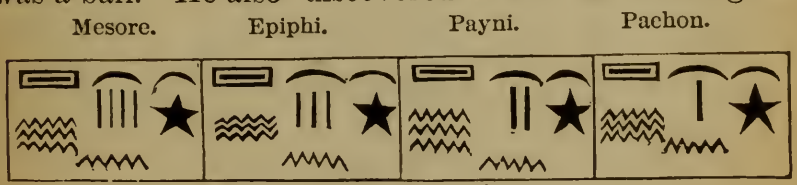


Fig. 28. Season of Inundation.

tudes, by observing the shadows, at noon, at different places on equinoctial days. (Fig. 29). He also calculated the circumference of the earth by this method. (Fig. 30). He ascertained the obliquity of the ecliptic, by measuring the sun's shadow at the same place on the longest and

shortest days of the year. He placed the circumference of the earth at 250,000 *Stadia.*

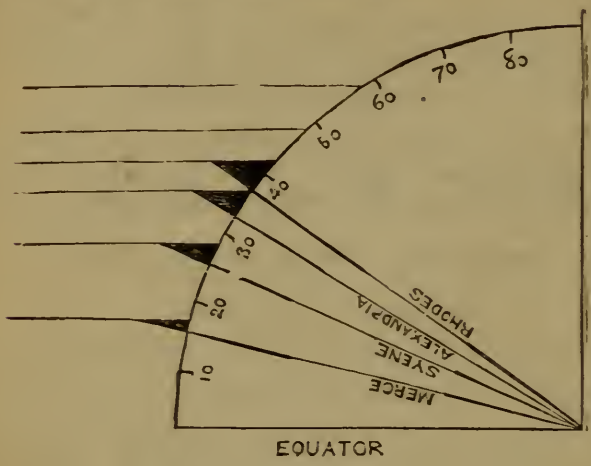


Fig. 30. Earth measure, by theory of Shadows.

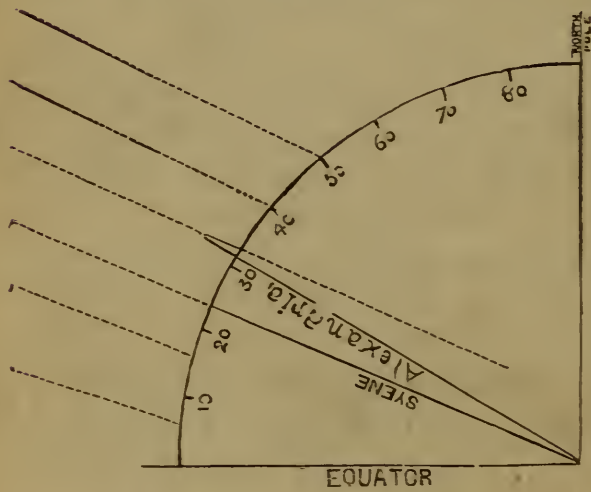


Fig. 29. Measurement of Latitude on Equinoctial days.

Still neither Eratosthenes the Greek, nor Manetho the Egyptian, undertook to translate the hieroglyphs for future generations.

There is a widespread belief among many people, even students, that the ancient Egyptians were a highly developed race, intellectually. Yet it is an error as far as it

refers to the pre-Ptolemaic period. In astronomy, mathematics, chemistry, art, economics, (witness the processes of irrigation), literature, painting, sculpture, (æsthetic), perspective, etc., they were singularly and persistently backward. In the midst of the grand mausoleums, and monuments of ancient Egypt, down to five or six hundred years before Christ, no *arch* relieves the severe angular

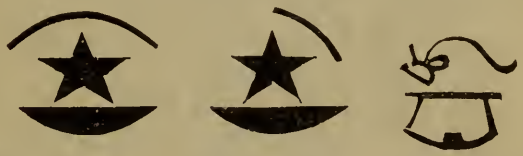


Fig. 31. Month. Half-month. Week. (U-K).

structures. In astronomy, the sun moved around from east to west in its risings. Its figures came from Arabia. Its letters changed not from sound-pictures. Its tomb paintings were daubs. Yet in massiveness, in grandeur, in lofty and enduring structure, it overreached its own history. During the comparatively modern Alexandrian epoch, however, it became the seat of Grecian culture. The obelisk ceased, and literature developed—not Egyptian, but Grecian.

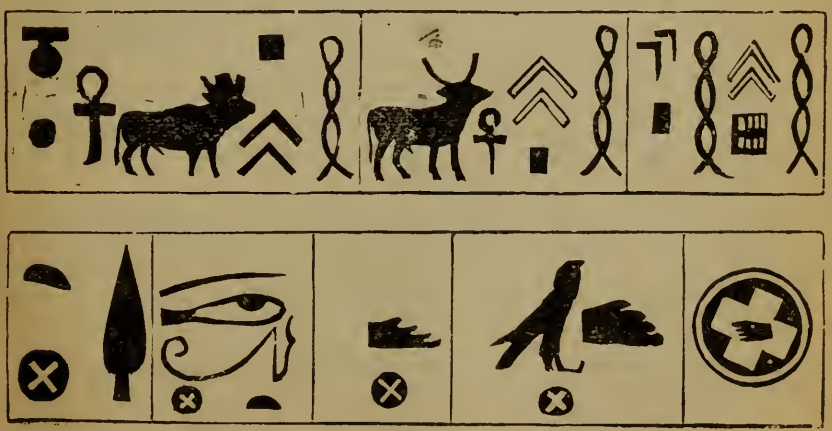


Fig. 32. Names of Egypt in Hieroglyphs.

FRAGMENTS.

The thirty dynasties of Egyptian sovereigns are by some placed continuously, one following the other. The more advanced idea, however, is that many of them are contemporaneous. It would be contrary to the philosophy of general history that the Thinite, Theban, Memphite, Heracleopolite, Elephantine, and other independent kingdoms should co-exist more or less, in different ages, while their monarchs were distinct and successive. The following table represents the opinions of several authorities:

No. of Dynasty.	LeSuer, Marietta Bey, Renan. B.C.	Lepsius, Bunsen, Fergusson. B.C.	Lane, Gardner Wilkin'n Rawl'sn. B.C.	Osborn's astron'cl Calculations. B.C.	By our Analysis B.C.
1	5735	3892	2700	2429	2800
2	5472	3639	2480	2420	
3	5170	3338	2670	2329	
4	4996	3124	2440	2228	2200
5	4472	2840	2440	2228	
6		2744	2200	2107	1900
7		2592	1800		
8		2522	1800		
9		2674	2200	2107	
10		2565		1959	
11		2423	2200	2107	
12	3435	2380	2080		
13		2136	1920		
14		2167	2080		
15		2101	2080	1900	
16		1842	1800	1900	1700

We do not think the above table wholly just to Wilkinson. In the "Topography of Thebes" he puts Menes at 2201, and Suphis at 2123, about the same date as we have adopted for the latter.

One of the most remarkable misconceptions of the duty of the historian occurs in the work of Wilkinson referred to. On page 506 he says: "I am aware that the era of Menes might be carried to a much more remote period than the date I have assigned it; but as we have as yet no authority further than the uncertain statements of Manetho's copyists, to fix the time and number of the reigns intervening between his accession and that of Apappus, [Apoph. Maximus. Time of Abraham's visit. 1900.], I have not placed him earlier FOR FEAR of interfering with the date of the deluge of Noah, WHICH IS 2348 B. C." This is heroic confidence in Dr. Usher, though hard on the Septuaginta, by whom the Flood was placed a great many centuries before 2348 B. C. The Samaritans, perhaps, who do likewise, also deserve some consideration.

Before any definite era in Egyptian history, the territory lying between the Red Sea and Assyria, including Shinar, Sodom, Gomorrah, Edom, (Petrea), Ellasur, Goim; Salem, capital of what was afterwards Judea, with Melchi-Zedek for priest and king; Gomar, ruled by Abi-melech; the cities of Philisto-Arabia, and tribes of nomads, were all more or less familiar with the doctrine of monotheism—of one God, "one, ineffable, invisible, all-powerful," as taught in La-outse's "Four Kings."

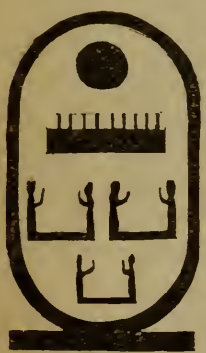
A comprehensive view of the Indo-Syrio-Coptic races, their locations, traditions and migrations, leads us to believe that an invasion of Egypt

before the Hellenic era would result in the erection of monotheistic monuments.

Zincke, Vicar to the Queen, in 1871, gave the Nile markings of annual overflow on the granite hills at Semneh more chronological credit than they deserve. He states that "in every instance [of these inscriptions] the date is given." As he gives this particular record great importance in making the early Egyptian epochs extremely ancient, he should distinguish between the numbered cartouche of a king, and a chronological date. There were no cycles, or other methods of astronomical chronology, established in the times of Osirtesen and Amenemha.

Baldwin, in "Pre-Historic Nations," rests much of his excessive antiquity of Egypt on evidence like the following: "You Greeks are novices in antiquity. The history of 8000 years is deposited in our sacred books, but I can ascend to a much higher antiquity, and tell you what our fathers have done for 9000 years." This was said to Solon by an Egyptian priest several centuries B. C. Not a fragment of Solon's writings, if there ever were any, remains. Plato and others, who had gathered up some of his teachings, preserve his memory. But the value of the evidence is not only lessened by its age, oral character, garbling, and the known tendencies of the Egyptian priests: It is well known that the supreme effort of the priesthood of that age was to establish the certainty and renown of the Gods, especially the deified mortals who reigned on earth. This only could be accomplished through the mysticism of antiquity. It is ludicrous, frequently, to see them leap from some well-known personage, like Darius Hystaspes, 10,000 years backward to Zoroaster, who was nearly contemporaneous with the former. Such testimony will not stand unsupported.

"Shemmo" is the Egyptian name of the foreigners known as the Shepherd race, who were driven out by Chebros-Amosis. They are thought by all historians to have been Canaanites. It will be remembered in this connection that "Chemmis" is the name given to Cheops by some ancient writers; also applied to Suphis. Amid the uncertainty, it is probable that the Cheopian race were the Shemmo of Egypt.



Mencophra.

According to Manetho, Queen Nitocris built the smallest of the three pyramids of Ghizeh. The name of King Mecora or Mencophra (Fig. 33) was found on the wooden sarcophagus in the underground chamber. Probably Mecora was the Theban name for the Memphite king Thothmosis III, (Fig. 21), to whom the third pyramid is credited.

"Spherical Trigonometry appears to have been wholly unknown in Ancient Egypt."—Kenrick.

The same writer says: "The fact that the pyramids are placed with their sides exactly facing the cardinal points, shows that in the early age when these structures were erected, they had the means of tracing an accurate meridian line. To accomplish this requires rather time and care than great astronomical knowledge. It is effected by the observation of the shadow of a gnomon, at the time of the solstices."

Mr. Kenrick is doubtless correct in the first statement. It is natural, therefore, to expect from him an hypothesis as to how the trigonometrical relations of the Great Pyramid were established! It was built, and built in sublime proportions, and far more correctly than modern structures of monumental character. The second statement is peculiar for so eminent an authority. The practical knowledge either of a gnomon or the solstices was wanting in a race that figured 11,340 years from Menes to Sethos, (Heroditus), during which time the sun moved around the earth, in its rising, sideways, four times! Hipparchus lived 15 centuries after the pyramid epoch.

Fig. 34. View of the Pyramids during the inundation season, from the Nile.

HISTORY OF THE PYRAMID.

Two great cities arose in the Nile Valley during the earlier history—Thebes and Memphis. The latter was situated near the fork of the Delta. Parallel with the left bank of the west fork, stretching from Alexandria in the northwest to Dongal, and Nubia in the south, and sinking away westward under the desert sands—is a range of low-browed mountains. This is the Libyan chain. Where it draws near the Nile, a few miles farther above the forks, close to where once the powerful city of Memphis sent forth her armies, on the west bank, is a broad, broken plateau, known as the hill of Ghizeh. It is a barren, and unsightly waste of rock and sand, painfully reflecting the glare of midday suns, and the glamour of unclouded moons. No spot on earth could have been selected more intensely disagreeable for human habitation or human glory—excepting the interior desert, on the confines of which we find it.

Below it is a valley whose soil yielded her increase without rain, and whose population crowded its borders from within as the drifting sands from without.

Here was a landmark erected in those dark hours before the dawn of civilization. Although the most extensive and enduring the world has ever known, it is impossible to ascribe to the builders any other development than that which comes with centralized power and accumulation of bodily strength. Here science has spanned 4000 years, challenging the intellect and genius of the present. The hill is especially historic in later years,—here Napo-

leon fought a most remarkable battle—demonstrating the wonder in military science of a hollow square—a battle which, says Alexander Dumas, decided the conflict between the East and the West. Here are the Pyramids.

There are some sixty pyramidal structures remaining in Egypt—and the half-obliterated ruins of many more. But the three which crown the hill of Ghizeh are objects of more especial study; and of these three the greatest, the Pyramid of Ghizeh, is the first and foremost wonder of the world.

On the west bank of the Nile, between the hill and the river, is the village of Ghizeh. On the east bank are the battered relics of "Old Cairo," now sometimes known as Fostat or Babylon, and a few miles farther to the north and east is Cairo, the capital of modern Egypt. From Cairo to the Pyramids is usually a distance of ten miles, but during the inundation it is fully twenty, by the necessarily circuitous route. One expression is in the mouth of every traveller who visits the Pyramid from Cairo:—"We thought them near by, and much overrated in magnitude. But wearily passing mile after mile, we found that their incomparable size deceived us—the distance was great and their proportions beyond description!"

The Pyramid of Ghizeh stands upon a shelf of rock 150 feet above the desert, and from 130 to 140 above the Nile. It is not alone either in its majesty or historic significance. Besides the two other large pyramids, there is another monument, of rude art but grand proportions, which is at least twenty-four centuries old. It is the Sphynx. There are also innumerable tombs, above and below the surface, in every degree of preservation, or rather destruction.

Without entering into discussion, we can justly observe

that there is no evidence that leads us to believe any Siriad monument now standing, is older than the Great Pyramid. The expression of such an opinion is often met, but the evidences are such that no reliance can be placed upon them. If the remains of such a pyramid present a broader base, than that at Ghizeh, and is shorn of its height, it is at once observed that *time* has worn it down. Time does not do such exact execution as to clear off the

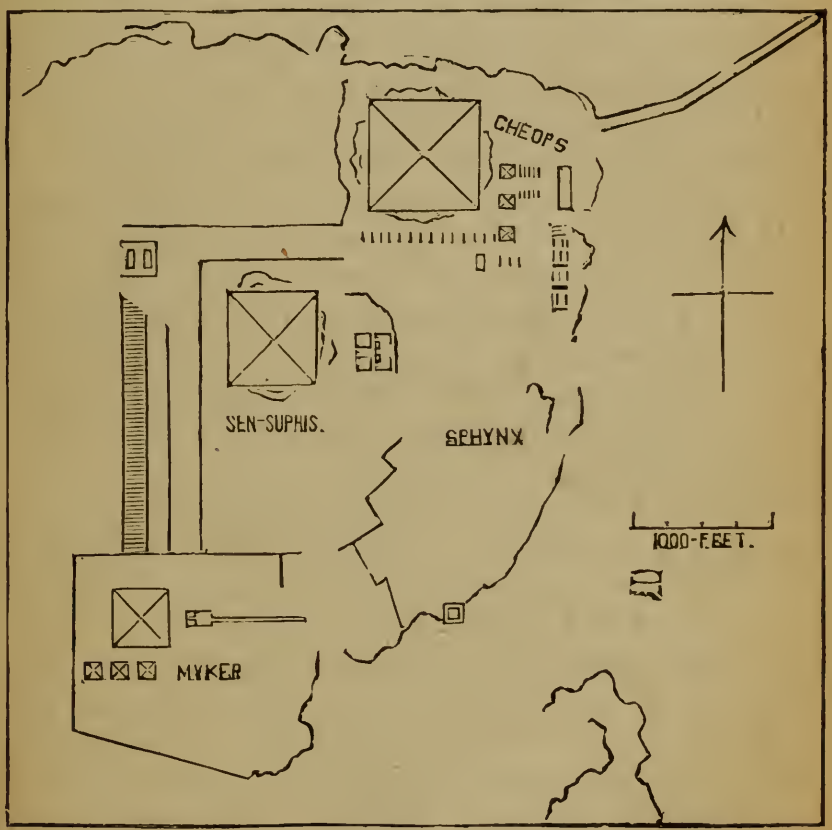


Fig. 35. Plan of the location of the monuments on the Hill of Ghizeh. Remains of the great causeway in upper right hand corner.

vast superstructure, leaving a few level tiers much less worn! Nor have the modern monarchs used the material

for building, when more recent cities are nearer other monuments and quarries. Probably such ruins are the remains of uncompleted pyramids. Neither is it good judgment to give ruins of brick structures, however vast, a date antecedent to the blast-worn and earthquake-rent, rock-built memorials which have outlasted them! Turning to the *history* of monumental Egypt, but this one Pyramid is heard from in the Ancient day—one which suddenly springs into the world's architecture, as a parent of the multitude of imitations which follow it. Never has there been a day in recorded time when *The* Pyramid was not looking out upon the world in solemn majesty.

Arabian writers say it was built before the deluge. A very wonderful thought that! Its shape, its substance, possibly its *mission*, may have preserved it from the wrath of the elements, to give to the survivors that cosmogony which an antecedent population possessed. Unfortunately for this hypothesis there are abundant evidences of a later period. The causeway, the *debris*, (chips), the hieroglyphs in the hidden masonry, and the older histories, all give substantial clues to its epoch.

Perizonius, and quite a number of mediæval writers, ascribe it to the Israelites. Dr. Clarke also shoulders it upon the Israelites, as the tomb of Joseph; who, however, was disgraced by a Pharaoh who "knew not Joseph" nor respected his descendants. Herodotus calculates their erection at two or three hundred years before Cambyses, (or about seven or eight hundred years B.C.). Conder concludes that 1000 years B.C. was not too modern a date.

Although Herodotus has informed us that the date was only about twelve generations before Cambyses, he ascribes its erection to Cheops and his brother, which would date at least 2000 years B.C. Eratosthenes refers

it to Suphis, of Manetho. Diodorus merely repeats the opinions of other writers, speaking of Chemmis, (Cheops), Cephren and Mycerinus first. Pliny is silent. Josephus, by inference, ascribes it to the Hebrews. Manetho, the Egyptian priest, gives Suphis as the builder, who is usually regarded as identical with Cheops, Chemmis, Saophis, or Chofo. His cartouche, or hieroglyphic oval, was found on the masonry in Davidson's chamber.

There is an ancient tradition, quoted by several writers, (referred to in chapter on Early History), of a shepherd race of India, the Pali, who once conquered Egypt, and the Pyramid has been ascribed to them. The Yoingees have also been referred to. Mr. Gliddon states that the direct descendants of Ham were the builders. Aristotle declared that they were built by despots to keep the people poor. Josephus relates a tradition of the descendants of Seth erecting two monuments, one of brick and one of stone, in Egypt, on which, or "in" which, they represented astronomical science. (See §Astronomy.)

The descendants of Ham have strong claims upon our belief. Not on account of the Mitzraimites, but of a race of wandering, migrating stone-builders known as Cuthites. These stone-builders were in no sense nomadic, but everywhere in which the dim history of the past places them—from Scythic Europe and shadowed Nubia to Erseland, their Cyclopean ruins attest their power and skill. The Gadelians, (from Gad-el-Glas,) a race of Cuthites, migrated from Egypt in the early ages.*

Still, the majority of students believe the Pyramid to be the work of a race of Semites, (Shemites). All testimony points to the belief that natives of the valley did

*Ancient history has so much yet to do and undo that we would not be greatly surprised if the "Gad"-elians were modernized into a portion of the lost ten tribes of Israel. We note this, that after tarrying in Greece many years they migrate to the north of Ireland, where we also find the remnant of Dan. (Tuath de Danaans.)

not build it:—Not one of their learned men knew aught of it; it had no hieratic writing either upon or within it, according to the best judgment of her historians;* it began an epoch in architecture to which they were strangers, and the close of the epoch was the introduction of the obelisk and colossus. We are fully aware of the opposing views of all the Egyptologists. Nevertheless such is our conviction. To say that the ancient Mastaba was the primitive pyramid is to say that the mound builder of Yucatan furnished the pattern for the mausoleum of Charlemagne. The "impulse," (p. 73), to honor the eminent dead may be universal, but the rough, unshapely mastaba was no more a pattern for the Cyclopean builders than the Indian mound of North America is a pattern for the invader, who, within a hundred years, erects the marble shaft upon the same spot. It will scarcely be claimed that the slender obelisk is the evolution of a pyramid—yet both are angular elevations, both are commemorative. But both spring suddenly into being, as types, with no intervening gradations from a primitive form. *In fact*, the later pyramids became terraced, flattened, and perishable—brick. The obelisk was monolithic.

Not only does archaic history and tradition point to a foreign race as the builders, but all light reflected from its dark record illuminates the Hebrew account of the genesis of the world's postdiluvian population. The Sabeans even state that antediluvians, the children of Seth, built it.

The person to whom it is almost universally ascribed, is Cheops, whose eastern origin we have discussed. The

*"No inscription, either in hieroglyphic or demotic characters, has been found in any part of the Pyramids of Gizeh; but as this [See p. 60.] was probably on the exterior coating, which has been entirely stripped from the Great Pyramid, its disappearance is not wonderful. The entire absence of hieroglyphics in the sepulchral chambers, and in the sarcophagus, is more remarkable."—KENRICK, (Herodotus, Notes on the text.) The inscription spoken of was Coptic or demotic, not hieroglyphic.

cartouches of "Shofo," in builder's paint, remain upon the rough rocks in the closed Chambers of Construction.*

Herodotus states, of Cheops and Kephren:

"No Egyptian will mention their names; but they always attribute *their* pyramids to one Philition, a shepherd who kept his cattle in those parts."

Subsequently the "foreigners" left Egypt, (p. 34.), went to Canaan with 240,000 men, and built (Jeru)Salem. It is supposed by Prof. Smyth, Dr. Seiss and many others, that a certain Philitis, with a tribe of Semitic, monotheistic Philistines, overcame Cheops "without a battle,"—built the Pyramid and returned to Canaan—and that Philitis was the great and mysterious Priest, Melchizedec.

1. That Philitis built the Pyramid seems a great strain upon probabilities. Instead of the words of the guide, (*hermeneis*) being given as an historical conclusion by Herodotus, it appears as an Egyptian sarcasm on Cheops by referring his great work to his "goat-herd."† 2. Is it possible that Philitis was Melchizedec if the migration to Canaan took place 500 years later, during the reign of Chebros-Amosis—i. e., he being builder of, and priest at Jerusalem?

In the statement of Herodotus, we call attention to the italicised word, "*their*." Mr. Bonwick uses it. The τας πυραμιδας of the text does not read so. It should be "the pyramids." "Their" would certainly leave Philitis out of his calculations.

However much the antiquarian may delve, doubt sur-

*Shofo is the Cheops, (Xeopas), of Herodotus, the Suphis of Manetho. M. Chabas states that they are the natural renditions of Koufou of the monuments. Perhaps Mr. Bonwick thus confuses the hated Cheops with a "great and good" king and "book-writer." Kephren's oval also appears in the Pyramid. A great many evidences point to Cheops as the builder.

†Lord Lindsay says the Royal Shepherds of Egypt built them—a great misconception, except as it refers to the shepherd conquerors of Egypt. Sharpe does not believe the Philistine Hyksos built the pyramids, based on the word "Philitis—Philistine." The Vedas refer to the Great Pyramid as "The Golden Mountain." See footnotes, p. 76.

rounds the history of the Pyramid's construction. We come to one conclusion, amid many conjectures:—that it was built by Cheops, a foreigner, and by a foreign race —the Hyksos.

The Pyramid, as a whole, was a work of such immense magnitude that no nation of to-day could furnish the labor, treasure and material, for continuous construction. But in detail it is not composed of such immense blocks of stone as are elsewhere found, nor does it require machinery beyond present possibilities. It is the necessary demand of civil government applied to the modern social status, *and its interior technique*, that renders its repetition impossible. Herodotus states that 100,000 men were twenty years building it. This is a very reasonable statement, for labor in Egypt was, and still is, given by the population for bare subsistence. The only requirement was that Cheops should scantily clothe and feed his hundred thousand men. Scarcely a nation in Europe is doing less than that to-day—not to mention the vast and costly armaments that accompany them. But while nations can get soldiers now for a pittance, *per capita*, they cannot open the treasuries for such vast public works, nor levy on the intellect which seems inclosed within the Pyramid.

In view of the Cyclopean ruins at Thebes, Baalbec, and other ancient cities, the transportation of the material is not so remarkable. Remains of immense causeways from the Nile to the Pyramid still remain, (Fig. 35). Why it should not have been built nearer the Nile, and save such vast preparatory structures, is a question.*

Many methods are given as the probable manner of raising the stones up the giddy terraces. Few are worthy of serious attention, and being wholly supposititious they will not be discussed here. However, the plan of construction is worthy of attention, as it has been the subject of

*It was not for lack of stone foundation, as has been suggested.

much study and especially by Mr. Glidden. The illustration, from "*Egyptian Archæology*," (Fig. 36), represents his views. "A" represents a vertical section of a pyramid, the foundations of which rest on the rock at an elevation above the level of cultivation. At "D" is a chamber hollowed out for sepulture. Over it is reared, by following generations, a succession of layers of masonry, until a certain size is attained, when smaller stone, or even rubble, ("B"), complete it. Over this is added, still in terra-

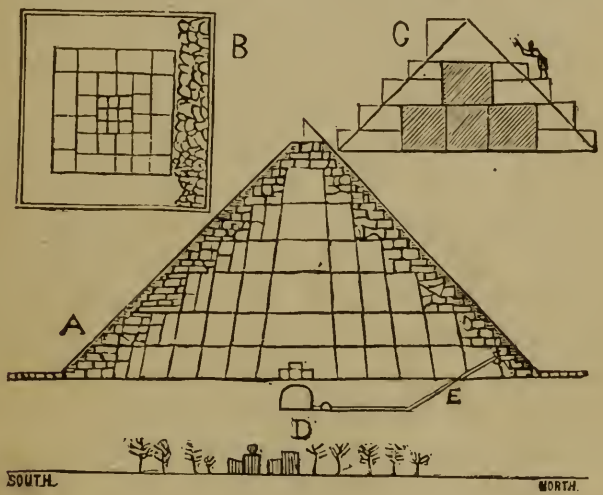


Fig. 36. Sectional view of pyramids representing Glidden's views of construction.

ces, blocks of finer quality. Then the laborers begin at the summit and chip downward, as at "C," leaving a symmetrical pile. There seem many unreasonable features in this hypothesis. After generations do not usually labor so extensively for dead relatives, as to absorb a nation's purse and power. Osborn wholly rejects the plan. The probability is that in the case of other pyramids, which were tombs, the dumb sleepers within reared them for the perpetuity of their own memory. Alas! the stones re-

main but the names are fled! It is not at all certain that the Great Pyramid, the first and grandest, ever contained a corpse.

With this diversion regarding its character, let us return to its history. Being moderately certain that it was built during the first 1000 years of Egyptian history, and by Cheops or Suphis, we put its date between 2500 and 2000 B. C., 1900 being the time of Abraham's visit. The former (2500) is the proximate date given by Wilkinson, Rawlinson and Lane, and 2228 is given by Osborn.

Sharpe, however, comes down to 1700, and a few Egyptologists struggle with 5700 B. C. There have been writers who scored the date 1000 B. C.

With the exception of the Bible, Herodotus' writings furnish the earliest reference to it. This historian visited Egypt about 484 B.C., and described to some extent both the Pyramid and its causeway for transportation of materials. The persons who gave Herodotus information regarding it, stated that it was the tomb of Cheops, who was buried far beneath it, on a rock surrounded by water, admitted from the Nile by a secret passage. This was, we doubt not, an ignorant superstition, as there are no known passages any distance below the subterranean chamber. It was also stated that at least the causeway was covered with inscriptions, and one was seen upon the Pyramid. Freely translated, Herodotus says:

"There was signified on the Pyramid, by means of Egyptian characters, how much was expended on radishes, onions and garlic, for the laborers; and as I well remember, the interpreter, reading over the characters to me, said that it amounted to one thousand six hundred talents of silver."

This inscription has been given by every writer on the Pyramid. It has delighted Bonwick, because it destroyed the "Fancy" that the monument was free from the idolatrous chisel. We see the looseness of the translation on page 56. We now pronounce this inscription a forgery by the Copts, which a careful rendering of the text would have disclosed. At the time Herodotus read this inscrip-

tion even the Copts, not within the priesthood, had forgotten the hieratic or hieroglyphic writing. We have strong evidence that the brilliant Greek School developing at Alexandria shadowed ancient Egyptian cultivation to such an extent that her literature passed into oblivion, and her monuments were regarded as the Cyclopean relics of a powerful but illiterate people. The shadow had fallen long before the time of Herodotus;* Isis had wept over a departed race, and (Os)Iris over a departed throne.

But the miserable remnant of Egypt had not forgotten her hatred. The *hermeneis* or guide, probably, could no more read an hieratic inscription than the great Greek who had travelled the world over. But Herodotus knew Coptic or Egyptian letters from the ancient hieroglyphs.

The latter he always referred to as ἱρὰ Αιγ.; but in this inscription he distinctly uses (δια Αιγυπ.) the *dia grammato'n Aigyptio'n* by which he always refers to demotic or Coptic characters. The *hira* is the condensed form of *hiera*, or "sacred." It is a pleasure to know that Herodotus sneered at the inscription, stating that even the rock-inscribing of the cost of the iron tools, bread or clothing would be more important than this vegetable record. At present there are no such silly hieroglyphs on the monuments. The tendency of Egyptian rock-history was to preserve the memory of lofty attributes, power and merit, and not the supposed-to-be-eternal literature of the simplest food of a race of slaves—whom Cheops would have whistled to his side as he would a dog!

Thus, while the Grecian mind, with its letters and philosophy, was driving out the intellect† of the servile race,

*During Egypt's twenty centuries of power, Ezekiel said: "They shall be the basest of kingdoms. I will sell the land into the hand of the wicked, I will make her land waste by the hand of strangers. There shall be no more a Prince of Egypt, etc." Conquered, reconquered, desolate, she has not had a native prince for about twenty-five hundred years.

†Ibn Abd Alkokem, an Arabian philosopher, stated that among the learned men of Egypt he could find no certain information regarding the Pyramid.

it is not probable that a servant hired from among the already degenerate Copts, could read mystical signs which had passed into the signification of a "caballah." Knowing that Egyptian Priests hated Cheops, his memory and his monument, how natural to refer its construction to a goat-herd, to belittle the great work before his Grecian paymaster! How much to be regretted that the inscription cannot be pictorially represented.

The utter ignorance of the Copts of the geometric principles upon which these structures were built is significant; nor have we evidence that the Egyptian race ever understood spherical trigonometry, or even angulation. We must bear in mind that it was the Grecian civilization which radiated from Egypt during the Ptolemaic period. Also that Osirtesen, the reputed architect of Luxor and Karnac, was doubtless a High Priest during the Shepherd reigns. Egypt's later astronomy came from Arabia.

Good old John Taylor sought to escape the idolatrous imprint of the above inscription by supposing the onions to be really degree(°) marks, the garlics and radishes representing minutes(′) and seconds(″), of which the guide was ignorant.

An old Coptic tradition refers to another inscription: "I Saurid, the King, built the pyramids in . . a time and finished them in six years; he that comes after me, and says that he is equal to me, let him destroy them in six hundred years; and yet it is known that it is easier to pluck down than to build. And when I finished them, I covered them with sattin, and let him cover them with slats."—(Greaves.)

The suggestion of "Arabian Night's" is too strong in this Arabian translation. We deferentially suggest the same to Mr. Bonwick.

Biblical references are rare, but of great historical value. Portions of the Bible were doubtless written as early as

1600 B. C., and the Edomitic work (Job) may have been contemporaneous with the later years of the first Hyksos.

The spirit of the Abrahamic fatherhood over his descendants makes even a statement as late as Jeremiah, (750 B. C.), of far more value than the chance light thrown by a solitary historian of early Greece; and inasmuch as the claim is distinctly set forth that the God of Israel built, or directed the building of the Pyramid, it is best to analyze its allusions well. But much of this will come under the head of the sixth statement of the "Analysis." There is much evidence that the Israelites were familiar with the Pyramid, and, though strange as it may appear, were in the habit of ascribing its erection to divine impulse. Although, as a matter of history, there is no word connecting the Pyramid with the Hebrews, as represented elsewhere, it was undoubtedly erected by a Semitic race whose origin was either in direct line with Abraham, or related to him through Shem and Noah.

And this race of Shemites or Semites were the peculiar inheritors and propagators of the religious wisdom which the world has accepted in the Bible, and is not unlikely to accept in the Pyramid—the one through Abraham, the other possibly Melchizedek. There has been an impression abroad that the Hebrews themselves, either under Joseph's ministry, or while in servitude, erected this vast structure. But this was quite impossible; nor, when we view the whole history of the valley, filled with works of magnitude and grandeur, does it seem that its erection—as far as the manual labor was concerned—was beyond the possibilities of Egypt during any ancient epoch. The Israelites were not in Egypt before 1750 B. C. Abraham lived 1900 B. C. The Pyramid was doubtless built 21 or 2200, B. C. Its own date is 2170, B. C. Again, the Bible

speaks of the labor of the Hebrews as consisting of brick work, a more modern architecture than the stone era.

Had the Great Pyramid of Egypt been a part of the Abrahamic "Logos," it would have been referred to in the Bible as the direct mission of the Israelites in Egypt.

On the other hand, the Bible references are just such as would occur if the Pyramid were a mystic testimony to them, of the same God, by a kindred and antecedent race—the real mysteries of which were one day to be disclosed.*

The most remarkable item in the history of the Pyramid is that its interior passages were immediately closed after completion. Not only was it closed on the surface, but that ascending passage was so completely blocked by an immense stone porteullis that to this day it has never been removed. If the Pyramid were built in the year 2170 B. C., then during the growth and ascendency of the Assyrian Empire; the development of the Abrahamic succession to Shem; the genesis of the Hebrew nation through the children of Israel; the singular existence of Edom; the rise and commercial eminence of Syrio-Phœnician Tyre; the evolution of Hellenic nationality; the founding of Rome; the decadence of Greece; the triumphs and decline of the eternal city; the destruction of Jerusalem; the Birth and crucifixion of Christ; the vast aggregation of papal power, and the Hegira of Mahomet; the lapse into the "dark ages;"—during all these bubbling, seething, changing years of humanity's history, those cavernous records of sublime intelligence were closed. Why?

The limestone facing of the Great Pyramid was removed

*This proposition will be peculiarly acceptable to those who have studied the new and startling discoveries regarding "Anglo-Israelitism." Any person who desires to study the Pyramid should investigate this subject —for it is rapidly assuming importance in the ethnology of Europe.

long before any modern writer described it. Still, the entrance by which we now pass in was unknown until opened by interior excavations.*

In the year 825 A. D., Caliph Al Mamoun, the Mahommedan ruler of Cairo, became convinced that vast treasure was stored within the Pyramid. He set men at work with fire, chisels, and vinegar, to open the heart of the mystery. Months of anxious expectation and deferred hope made the hearts of his laborers sick, for the dark, hot, dusty hole they projected was slowly piercing the very heart of the mountain, but no treasure nor mystery

Fig. 38. Horizontal section of passage around portcullus, K. N, Junction of Al Mamoun's hole and original passage. M, Coming from the north. O, Same as H in Fig. 37.

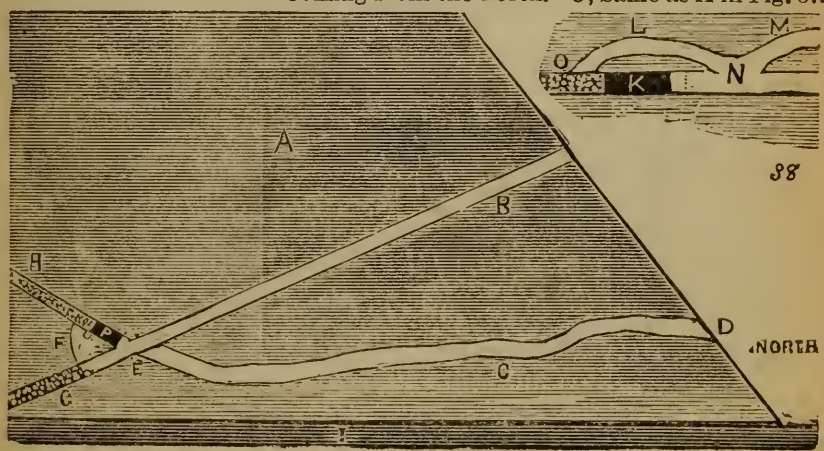


Fig. 37. D, C, E, F, Passage cut by Al Mamoun's laborers. A, Masonry. B, Original entrance, closed and forgotten in Al Mamoun's time. F, Passage cut around the portcullus, same as L in Fig. 38. G, Descending passage closed with rubbish. H, Ascending passage, filled with loose rocks. P, Portcullus.

was unveiled. Mutterings and discontent informed the Caliph that to go much farther with such onerous labor and such draughts on his treasury would threaten revolution. One hundred feet were passed and still solid rock

*The Romans are said to have discovered the entrance by removal of a stone over the opening.

before them. In the thick and heavy air the workmen dropped their primitive tools and gave up the task. A few moments more and the great effort to pierce the Pyramid's heart would have ceased, and the world have henceforth regarded the ancient pile, as Al Mamoun would have done—a solid pyramid of masonry! What other person would have subjected himself, after such a trial, to the laugh of the world, and the great waste of means, to do the same thing over? There was a "destiny" as some would say—a "Providence," as most will insist, in what occurred. In the midst of such silence that the heart's beating could be heard,* while nerveless Arabs were gleaming upon each other with suspicious eyes and rebellious hearts, and the dim torches casting sepulchral shadows in the narrow way—a dull, heavy sound, as of falling masonry, was heard near them, but farther within the rock. Every man sprang to his work, and in the direction of the sound they soon burst into a passage-way of most wonderful finish and polish! Now indeed were the treasures of Araby's day-dream within reach! A few steps into the darkness, and lo! The passage (seen alone in the ascending direction, for the descending passage had been filled with sand and rubbish), was blocked by an immense portcullus of stone, which defied all human efforts to remove. And what was most interesting, this *upward* passage would not have been known but for the *falling of the stone.*

No one has yet pierced the mystery of this singular coincidence. See B, Fig. 50, for its location.

These now hopeful Arabs soon dug around the massive block, (Fig. 37), and found the passage above filled with rubble stone and broken rock. It was a laborious task to remove these one by one; but when accomplished, says

*As in Mammoth Cave.

Dr. Seiss.—"Up and up the smooth and long ascending floor-lines the marauders pushed their slippery and doubtful way, till near the end of the Grand Gallery. Then they clambered over a three-foot step, then bowed their heads beneath a low door-way, bounded on all sides with awful blocks of frowning red granite; and then leaped without further hindrance, into the Grand Chamber, the first to enter since the Great Pyramid was built."

But the crest fallen Ishmaelites found nothing but an empty stone chest, known as the coffer or sarcophagus.

The failure to find treasure, it is said, so enraged the laborers that Al Mamoun pretended to find enough gold to pay all the expenses, buried in one of the chambers.

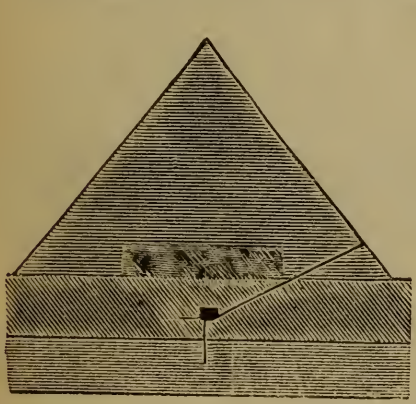


Fig. 39. The Great Pyramid 1900 years B.C.

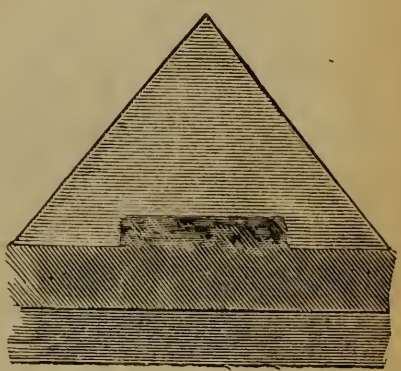


Fig. 40. Same 600 A. D.

After this attempt, the Pyramid had a long rest. The passage of Al Mamoun became filled with rubbish, and finally obscured; the regular entrance had not been opened, and once more the dawn and nightfall of ages passed over its eternal secrets.

But the Arabs had discovered much, and it was not wholly forgotten. In the 17th and 18th centuries a general interest again became manifest among European

scientists, in the Great Pyramid. Mr. Davison, who was British Consul at Algiers in 1763 spent 18 months investigating its interior, appropriating great labor and expenditure to unravel its mysteries. He also discovered the chamber of construction named after him.

But to Prof. Greaves,(1637), an enthusiastic Englishman, belongs the earlier credit of devoting toil and fortune to "Pyramidographia," the title of a work published by him. He made the first distinct attempt to get correct measurements. M. Maillet made great exertions

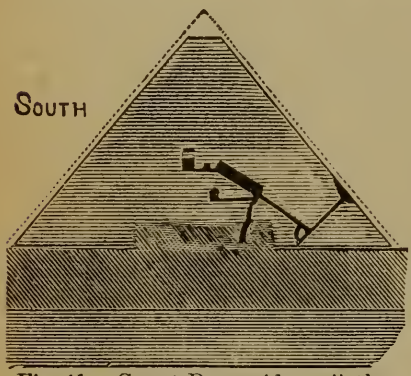


Fig. 41. Great Pyramid until the close of the eighteenth century.

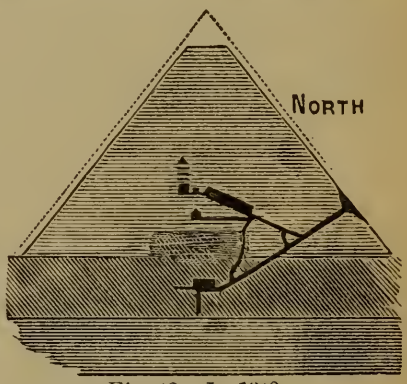


Fig. 42. In 1840.

to elaborate its interior—successfully explored many passages, and altogether entered the structure for mensuration over forty times.

In 1817 Mr. Caviglia repeated the investigations of Messrs. Wood and Davison. He opened the subterranean chamber, with great trouble and danger. The French scientists under Napoleon, 1799, made extensive researches, and rendered much valuable information.

To Gen. Howard Vyse belongs great credit. He devoted his life and fortune to the development of many of the facts now so well known; reopened Al Mamoun's hole; made new excavations, and cleared out passages; found

the first casing stones in the rubbish; found the four upper chambers of construction, with the hieroglyphs of Cheops or Suphis; gave remarkably correct measurements, and also opened up the neighboring pyramids.

Before us lies a volume written by a Pyramid scholar and enthusiast—John Taylor, of Leonard Place, Kensington. It was written in 1859, and the title is, "The Great Pyramid. Why was it built? And who built it?" He made an honest attempt to "recover a *lost leaf in the world's history*," (The italics are his). He opened to the world the great volume of stone in the light of an Inspired Work; and in illustration brought out its mathematical, astronomical and metrical properties in strong light.

From that day to this, twenty years, his views have been developing and enlarging until many thousands of thoughtful students are in union with them. He has recently passed away, but not until he saw the flame he lit radiating from Egypt over the whole world.

Prof. Piazzi Smyth, Scotland's Astronomer-Royal, took up the question in 1864, before the Royal Society, and subsequently published his work "Our Inheritance in the Great Pyramid." In a few months he determined to investigate, personally, the mighty problem. So in 1865 he visited the Pyramid, at great personal expense, with *family*, instruments, skill, knowledge, and an intense faith, to back him. His researches and measurements will be a monument to his memory. They are recorded in two works: "Life and work at the Great Pyramid," and "Antiquity of Intellectual Man."

There have been many other writers upon this subject, and the interest is extending to the general public. The antiquarian world is awaking to the investigation of a monument whose vastness and hidden purposes loom up

through the ages to belittle the modern man and modern science.

The great question involved in the history of the Pyramid is—was it built as a tomb? At the time of its erection the Egyptians were in the habit of burying in a rock, and for the eminent dead, they built temples or tombs. Even Abraham was buried in a cave at Macphelah. Thousands of rock-tombs surround the pyramids. All the other pyramids were tombs, in the judgment of Egyptologists. Mummies have been found in the sarcophagi within the sepulchral chambers. But the other pyramids are all, doubtless, subsequent to the Great Pyramid, and supposing the latter to be a tomb, the builders took pattern after it. That they did not understand the entire import is evident from the fact that, 1st, the upper and symbolic chambers were sealed by a great stone which never has been removed, but is passed by digging around. And 2nd, that no attempt was ever made to follow in that direction, by constructing upper chambers in the others. Still, it is possible that Cheops, knowing the hostility of the Egyptians, built a subterranean tomb as usual—but arranged the upper chambers for utilitarian purposes,—and after death secured burial in the upper rather than the lower rooms—then sprung the mighty portcullus of stone. However this may be, and it is extremely doubtful, the symbolisms of the mighty monarch whose tomb it was or was not, still remain.

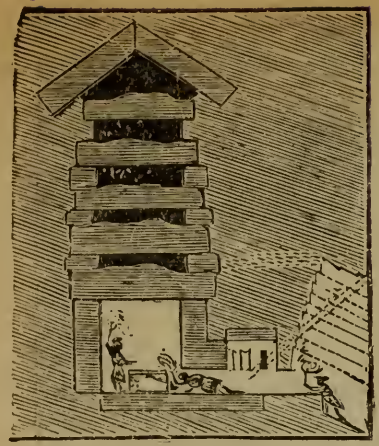


Fig. 43. Sectional elevation of Great Pyramid. P P, Square of equal area. A, Entrance. B, Junction of descending and ascending passages. C, Subterranean Chamber. D, Blind passage. E, Al Mamoun's forced entrance. F, Junction of ascending passage and Grand Gallery. G, Grand Gallery. H, Well. I, Enlargement of Well called the Grotto. J, Horizontal passage. K, Queen's Chamber. M, King's Chamber. N, Chambers of Construction—larger section in left hand corner of the page. O, Air channels.

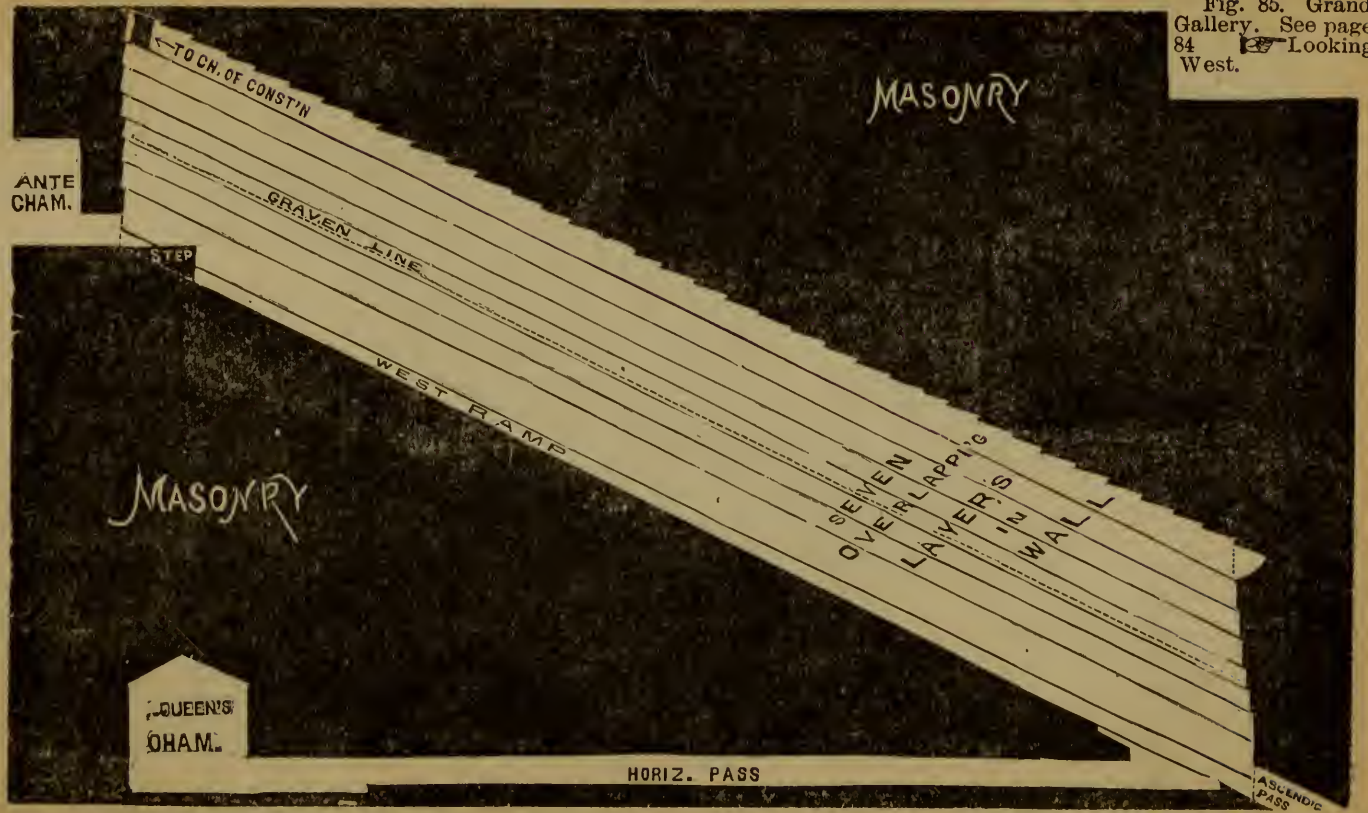


Fig. 85. Grand Gallery. See page 84 ☞ Looking West.

PARTS AND PROPORTIONS.

Ancient vertical height, 5813.13 Pyramid inches. This is not absolute, but meets certain requirements of structure, and the variations may be due to the precise intersection of the side angles and the corner socket base line not being positively ascertained.
Present vertical height, 5439 P. inches.
Length of base side, 9131 P. inches. Same difficulty referred to in height.
Height of sides, angular, 7392.86 P. inches.
Cubic volume, over 91,000,000 cubic feet. Weight, about 7,000,000 tons.

The geometrical shape of a pyramid is familiar to all, and strangely isolated from books and society must he be who has never heard of the great pattern in the desert-bound valley of the Nile. The tumuli of prehistoric races are doubtless children of the same impulse in architecture.

In mensuration a pyramid is the same to a triangle that a cube is to a square, a sphere to a circle. The triangle, the square, the circle, measure surface, while their cognate shapes measure volume. All the pyramids of Egypt are not specially worthy of note, as exhibits of mathematical or æsthetic proportions. But the Great Pyramid, when unmutilated, was a figure of remarkable design and properties.

Its height from the base rock to the original apex has been variously given. Many measurements were imperfect owing to the ragged character of the exterior. But Col. Howard Vyse, and Prof. Piazzi Smyth have both carefully measured it by angles established after several of the original casing stones were discovered. In 1797 the French *savants*, who made such thorough researches about the Pyramid, discovered at the corners, "sockets" or "*encastrements*," in the base rock, which gave reasonably exact points from which to measure the base-sides and the angle of inclination. These sockets subsequently

became filled and covered many feet by the drifting sand and accumulating debris, so that Col. Howard Vyse, who again uncovered them forty years after, found an Herculean task before him.

Although at least a hundred different measures have been given, of the size of the Pyramid, there can now be little doubt of the approximate correctness of the following: Perpendicular height, from base to ancient apex, 5818.94 English inches.* Pyramid inches, 5813.13. The length of a base side 9140 inches. (Pyr. Ins. 9131.)

It therefore covers somewhat more than thirteen acres, with a volume of over 91 million cubic feet, weighing nearly 7 million tons, the largest accumulation of masonry in the world. It is higher than the highest pinnacle of St. Peter's at Rome.

As before stated it faces the cardinal points, being only 5′ out of an absolute orientation.† The inclined sides were once smooth and shining, with no break on the polished surface. Strabo speaks of a secret stone which could be removed, and give entrance to the "tomb" within. This was a tradition of slight value, based on the ancient love of the mysterious. If true, the "secret" entrance was forgotten. About 1000 years after Christ, the Mohammedans began to strip off the marble casing to build palaces and bridges, and in the 18th century, even up to the time of Col. Vyse's explorations, it was not *known* that it ever was cased. Even now there are some hardy theorists, as there always are, who dispute it. While Col. Vyse was laying bare a side, down to

*English (or American) inches will be understood in this work, when not otherwise defined. The Pyramid inch is .001 of an inch longer than the English. The general expression in feet for the Pyramid dimensions is—486 feet high, 764 feet on a base side. The present height is 454 feet.

†This is an isolated case of correct orientation, vs. Proctor notwithstanding.

the "esplanade," he fortunately came in contact with two of these casing stones *in position*. Thus by the *encastrements* discovered by the French, to give extreme corners, and these casing stones to give the precise angle of inclination, the measurements became reasonably exact.

The pyramid, as most are aware, is built in receding terraces, or tiers of masonry, and these casing stones were fitted into each tier, with great exactness, bevelled on the exterior surface, and joined or jointed with astonishing perfection. Several pieces have since been discovered and taken to Great Britain, but those of Col. Vyse were lost. These casing stones are important items in Pyra-

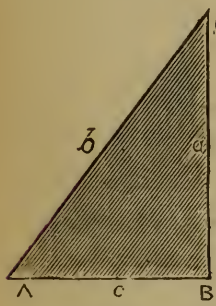


Fig. 44.

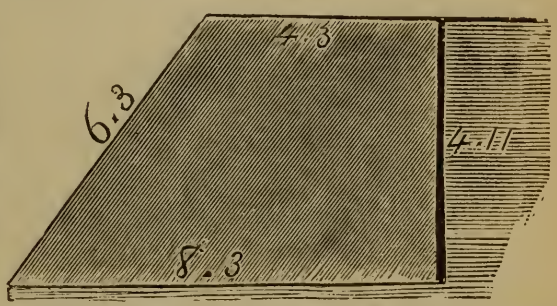


Fig. 45. Casing Stones, figures representing feet and decimals of a foot.

mid study, and we give their figure, (Fig. 45). By these casing stones the angle of inclination is ascertained, and reckoned at 51° 51′ 14.3″. But even this is taken at a mean from several calculations, as the opposite angle varies from a right angle. However, the error, if any, would be so fine that it will scarcely modify the great problems involved.

The latest deductions give the angle of inclination of the sides at 51° 49′, instead of that given above. But inasmuch as 51° 51′ 14″ is required for what is henceforth described as the *Pi* proposition, (quadrature of the circle),

we retain it. Any student in engineering understands the difficulty of working in minutes, to say nothing of seconds, and how slight an error a ′ is.

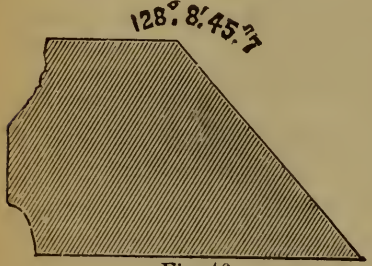


Fig. 46.

Fig. 44 represents the detached triangle by which the inclination is measured, A, B, C being not quite a right angle when drawn parallel to the edge attached to the masonry. Fig. 46 represents an elevation (sectional) of one of the casing stones, as found. The figures 128°8′45.7″ give the obtuse angle, which taken from 180° leaves 51°51′-14.3″ as the angle of inclination.

When these marble casing stones were in place, white and polished, and every joint so fine that a lens alone disclosed them; and when the unclouded sun of Araby arose over the Red Sea—reflected from its vast surface till it glowed and glinted in fiery splendor—how like a jewel from heaven must it have appeared. Picture its reflection in the changing tints of the calm and mirrored Nile!*

People who have gazed upon its shattered beauty, ignorant of the mystery within, and the ancient glory without, are still struck with a sublime appreciation—what must the *perfect Pyramid* have been?†

As the sides of the Pyramid now appear they are immense

*Strabo, one of the earliest Greek writers, says:—"It looked as if it had descended upon its site, ready formed from Heaven, and had not been erected by man's laborious toil." Diodorus said, "It seemed as if placed on the surrounding sand by the aid of some deity, rather than by the s le and gradual operations of man."

†"Piramona" was Coptic for "splendor of the sun." "Pi-re-nes," according to Lazerco was "splendor of the sun."

stair cases of receding tiers of masonry, each step being from two to four feet high, and in many places almost obliterated by the action of the weather, and by the visitors who send fragments of rock booming down from the summit. Still, as you look at the pile from a little distance, this terraced condition of the sides is lost in the grey outline. It shows how travelers differ in regard to every thing pertaining to measurements, that so few persons agree as to the number of tiers or terraces on a side.

Pococke, there in 1743, gives 260, the same as Lewenstein. Conder gives 206, and Greaves 207. Maillet, 208; Vausleb 255, and Bellonius 250. Lucas 243, Sicard(1711) 220, Davison (1763) 206, Ferguson 203, Dufeu 202, Prosper Alpinus (1591) 125. 208 seemed to be the number generally agreed upon, until Prof. Smyth counted them and gave the measurement of each of the 202 tiers.

This difference is largely owing to the rubbish at the foot covering more tiers during some centuries than others; some sides being less perfect or more broken up; the top platform being smaller and higher, and, possibly, there being an actual difference on different sides.

On the top there is a level, the apex having been truncated. At least some portion of the loss of the upper corner has been by "wear and tear." Travelers who try to see how far out toward the base line they can throw a stone, or who send rocks hurling, crashing down the sides, have destroyed considerable. However, had there ever been either a marble-casing or common rock corner-stone it would have withstood the wear of the elements many thousand years longer than it has. History tells us the marble was intact 8 or 900 years ago, but is not precise about the "chief-corner stone."

All the writers on the Great Pyramid seem puzzled over this platform at the top. It is rather more than 30

feet square, and hence is, and has been for ages, too large to be accounted for solely by removal of the corner stone, unless that were indeed a wonderful piece of marble.

The earliest writers describe the platform as much smaller than at present. Some declare it never had an apex. It has been supposed, in modern times, in view of the religious symbolisms of the interior, to be the "chief-corner stone which the builders rejected"—or the type of Christ.

It is rather a laborious task to reach the top, but most travelers do so, when a very remarkable view is thrown out before them. In the west the Libyan chain; to the southward, the Mokattam range; eastward, the quiet Nile passing along just as when Great Ramesis rushed his chariot along its banks; and all about, the wonderful "Field of Pyramids," with the tombs of the mightiest of earth.

Near by is the Sphynx, and but a few hundred feet off are the great brothers of the monument, but little smaller, and better preserved. On the northern face of the Great Pyramid the rubbish extends up the side from fifteen to sixteen courses of masonry. At forty-nine feet from the base, at the fifteenth or sixteenth course, on this north side, is an entrance into the interior. It is a small, narrow tube, three feet, five and one-half inches wide, and three feet and eleven inches high perpendicular to the *incline*. (Fig. 47). The opening has been badly mutilated, the masonry being torn out for a considerable distance. Strange feelings thrill the soul as one enters this dark and silent passage. The bats and vermin, once prevalent, are now mostly driven away by the constant stream of

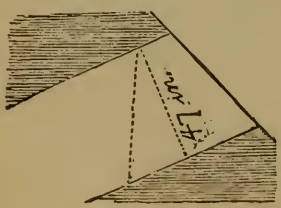


Fig. 47.

visitors; but in the earlier day, say in 1610, when Sandys entered, the pile of rubbish scattered within, and the dis-

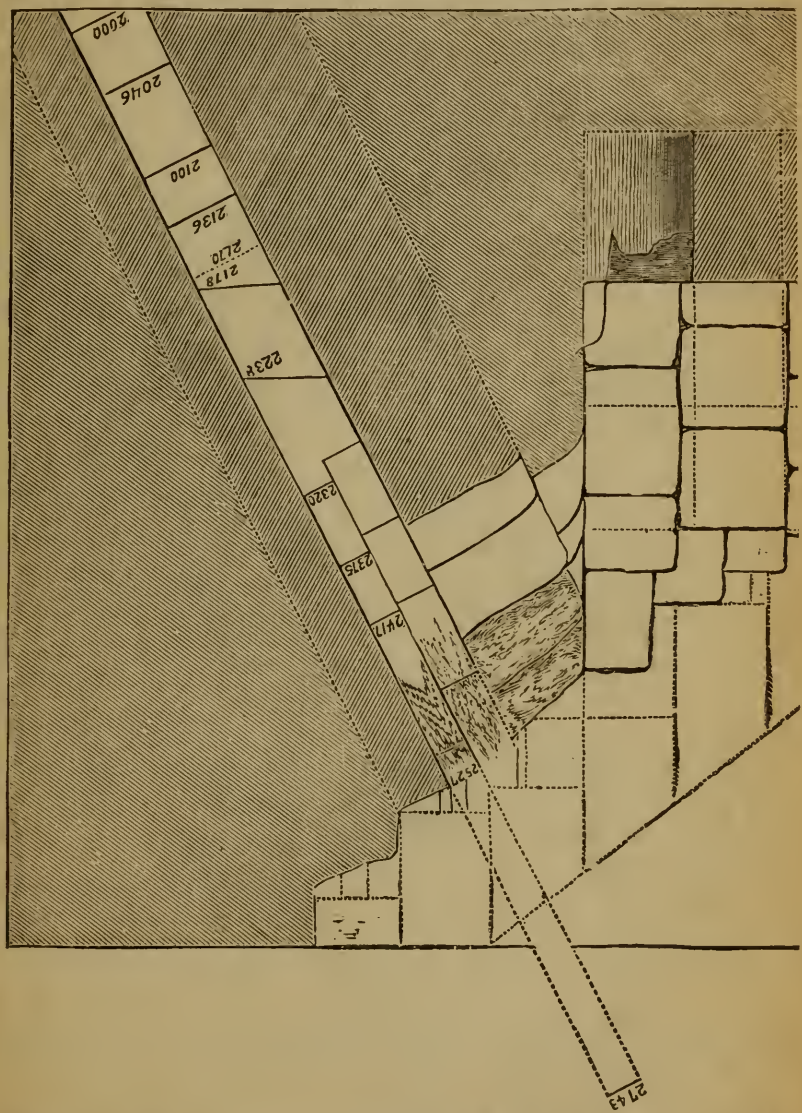


Fig. 48. Section of the Pyramid about the entrance.

gusting vermin, its inhabitants, made exploration decidedly unpleasant.

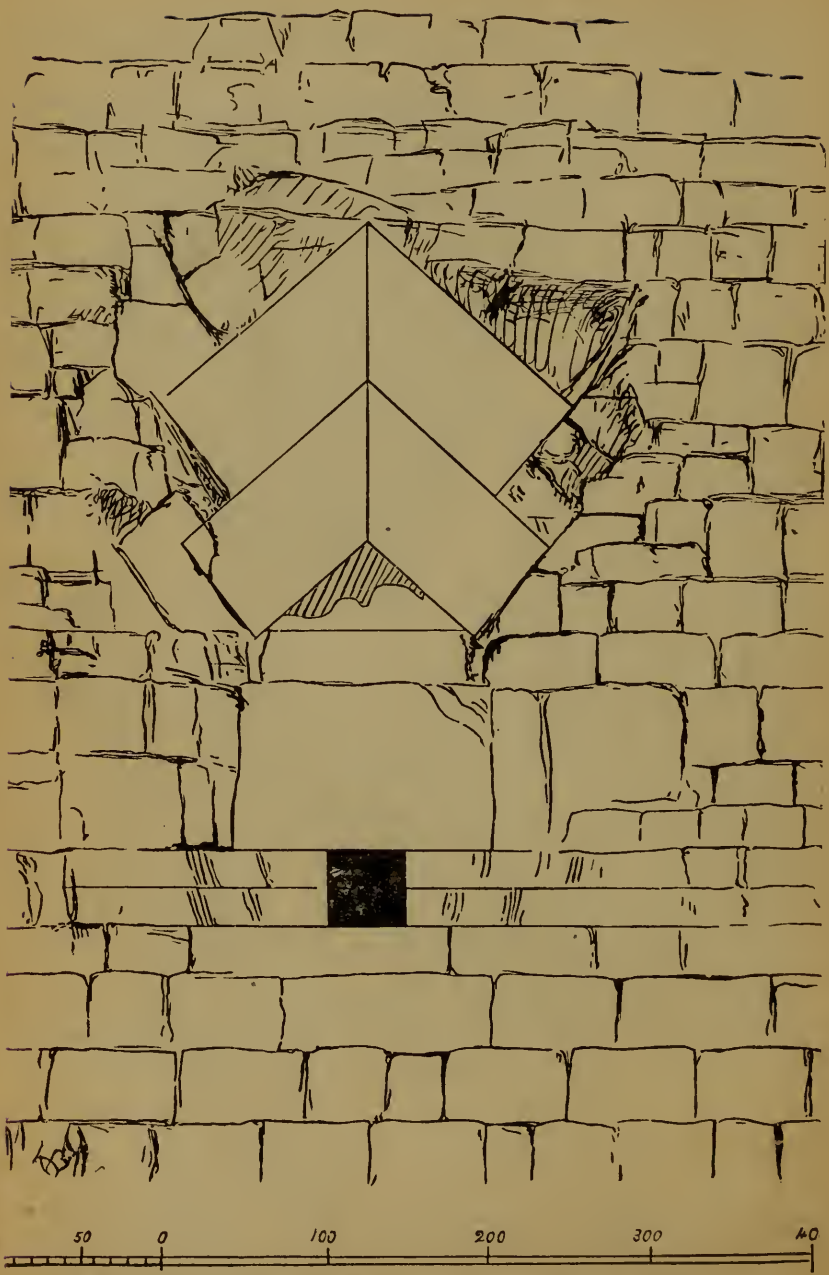


Fig. 19. View of the entrance, dark square being the opening.

A very peculiar architecture is present at this opening, —so peculiar that we wish to call special attention to it. No writer has thus far mentioned the matter, but it may be of direct importance to the Pyramid student. In Fig. 49 appear two triangular layers of masonry, the opening forming a square block beneath. A portion of the name of Egypt, (Fig. 32, p. 47), resembles this closely. Investigation since the first edition confirms the opinion that it is a significant hieroglyph. It is worthy of note from the fact that it is the only structural mark on the building connecting it with the stone literature of Egypt. But this is a "structural" hieroglyph and not graven; and probably only exposed when the casing was torn off.*

Almost every writer has claimed that beyond a few builder's daubs to guide the workmen, in unfinished chambers, the Great Pyramid was wholly free from hieroglyphs. This double layer of pyramid-arch over the entrance is not for the purpose of strength of structure, for the arch was unknown in Egypt for twelve hundred years after the Pyramid was built, and a capstone covers the passage completely. Again, in the inner chambers there are flat roofs over large rooms.

THE PASSAGES.

From ancient entrance to Subterranean Chamber, 4445 Pyr. inches.
" " " " floor line of ascending passage, 988 P. inches.
Ascending passage from floor junction to Grand Gallery, 1542.46 P. in.

The entrance is not in the center of the pyramid, east and west, but removed some 24 feet and six inches to the east. The design of this deviation is unknown, unless it were to deceive those who searched for entrance during the ages it was sealed.

Entering the narrow opening represented in Figs. 48-9, we find a passage of uncomfortable dimensions, extend-

* This hieroglyph seems to have some dim relation to material life (Apis), as distinguished from Isic or spiritual existence. In another and cruder channel of investigation, through Chaldaic and Semitic similitudes and Phœnician originals, it reads: "ENTRANCE to TEMPLE."

ing southward and downward at an angle of 26° 27′. As this descending passage is now somewhat clear of rubbish, we can proceed without material change for a distance of 343 feet and 10 inches from ancient entrance, when it becomes horizontal for 27 feet farther. At this point it enters a subterranean chamber. At least 23 feet have been worn and broken away from the mouth, so that its real length is 320 feet. 988 Pyramid inches from the opening, the ascending passage begins, the one which is blocked by the portcullus. The angle of ascent is 26° 18′. After passing upwards with no further deviation beyond the forced entrance of Al Mamoun, for the distance of 1544 inches, we suddenly straighten up in a long, lofty hall called the Gallery. At present a few figures merely are given. By referring to Fig. 48, the highest number engraved in the passage is 2527 which implies that it is exactly 2527 inches from juncture of ascending passage and Grand Gallery. A little farther down are two lines vertical, and next, a dotted line at right angles with floor of passage. The dotted line is cut into the stone, and is supposed to represent the time of building the Pyramid, 2170 B.C. The other lines figured are joints in the masonry, every one of which has been most carefully measured by Prof. Piazzi Smyth. It will also be noticed in Fig. 48 that the layer of masonry on the side wall near mouth seems to be doubled up, backward, four inches below 2320, a subject to be referred to hereafter.

The passages in the Pyramids of Ghizeh do not vary much from 40-42 inches in width, and from 45 to 50 in height, all too small for erect standing.

SUBTERRANEAN CHAMBER.

Length, east and west, 551.4 P. inches.
Width, north and south, 324.6 P. inches. Height irregular.

The Subterranean Chamber, 370 feet, 10 inches from *ancient* mouth of inclined passage, is a large, gloomy vault

46 feet long, east and west, 27 feet and 1 inch wide, and 11 feet 6 inches high at highest point. Within it a shaft has been sunk 36 feet, with no apparent object, unless to search for the tomb of Cheops. The Subterranean Chamber is 99 feet below the base of the Pyramid, from base to ceiling. There is a continuation of the horizontal subterranean passage (D, Fig. 43) on the south side, 52 feet, 9 inches. This chamber was entered over 60 years ago, by Caviglia, with great difficulty. He found both Greek and Roman characters inscribed on the walls. Ancient writers declare it to have vaults, but they have not been found. The location of the Chamber is under the centre of the Pyramid, but the centre of the room is out of the vertical axis about three feet east and west, and five north and south. The chamber is rough, and torn up in places.

THE WELL.

Reference to Fig. 43 will show a long, irregular passage descending from the large hall or gallery referred to, down to the subterranean passage. This is known as the Well. By it any one can reach the interior of the Pyramid by ascent, without passing the portcullis, in the ascending passage; or, being in the upper rooms, can find their way out. It is a tortuous and disagreeable hole to penetrate. Another reference to it will be found on page 87.

THE PORTCULLUS.

Length, 178.6 P. inches.

At the point of junction between the descending and ascending passages, (Fig. 50, and L, Fig. 71,) is the stone which, by dropping, exposed the portcullis, This is of granite blocks, pushed down the passage, the first one being tapered to wedge tightly into the constricted mouth of the passage. It is 178.8 inches long. It was imperfect in one element—the veil which fell while the Arabs

were pounding away at the masonry near by. But for this circumstance the interior would have remained sealed for ages.

The ascending passage rises at an incline of 26° 18′,

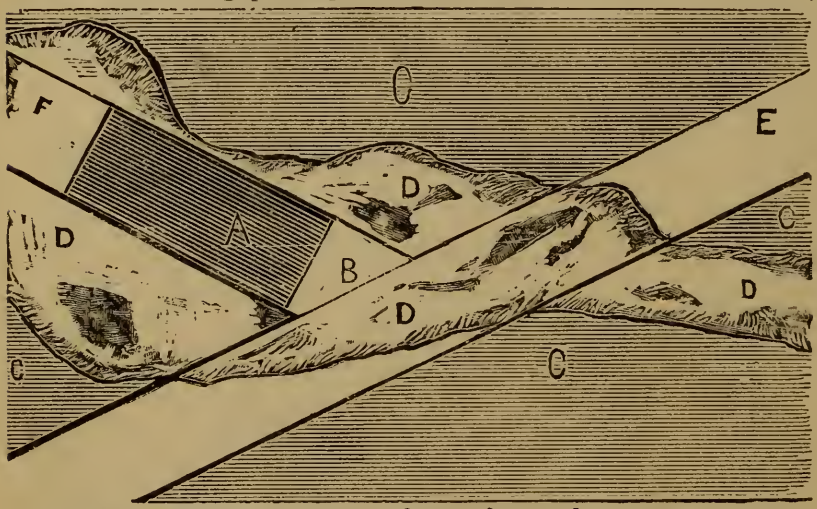


Fig. 50. Junction of the descending and ascending passages. E, the Descending Passage. F, Ascending Passage. D, Al Mamoun's Hole. A, Portcullis. B, Stone which fell. C, Masonry.

and is 1542.46 inches, or about 128 feet 6 inches to the Grand Gallery wall.

THE GRAND GALLERY.

Breadth, 82.12 Pyramid inches. Mean vertical height, 339 P. inches. Extreme length, on the ramps, 1881 P. inches; on graven line, 1878.4.

The Grand Gallery is a long, narrow, high hall, ascending at the same angle as the passage. Its sides are made up of seven layers of masonry, each of which, as it rests upon the under one, laps over into the Gallery thus contracting its width near the ceiling. On each side of the floor of the Grand Gallery, extending up its entire length, is an elevation or solid stone bench, 24 inches high, and projecting out on the floor so that the entire breadth of Gallery of 82.12 inches is reduced, between the benches, to 41.2 inches, the benches being each 20.5 inches wide.

Fig. 52. Looking downward from horizontal section into passages. A, Queen's Chamber, it and its passage being 25 courses of masonry below King's Chamber. B, Antechamber. D, Passage. E, Great Step. H, Coffer.

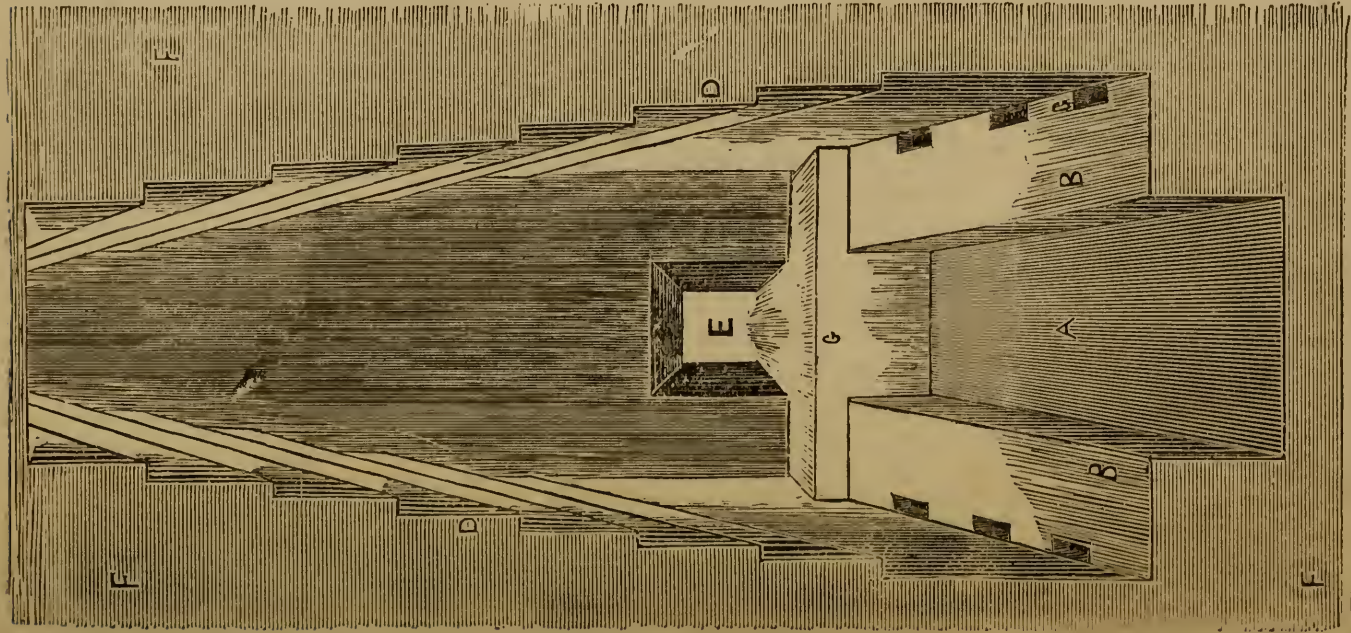


Fig. 51. Perspective view of upper end of Grand Gallery. A, Floor. B, Ramps or benches, showing three last ramp holes. D, Seven overhanging tiers of masonry. E, Antechamber. F, Masonry. G, Step to level floor.

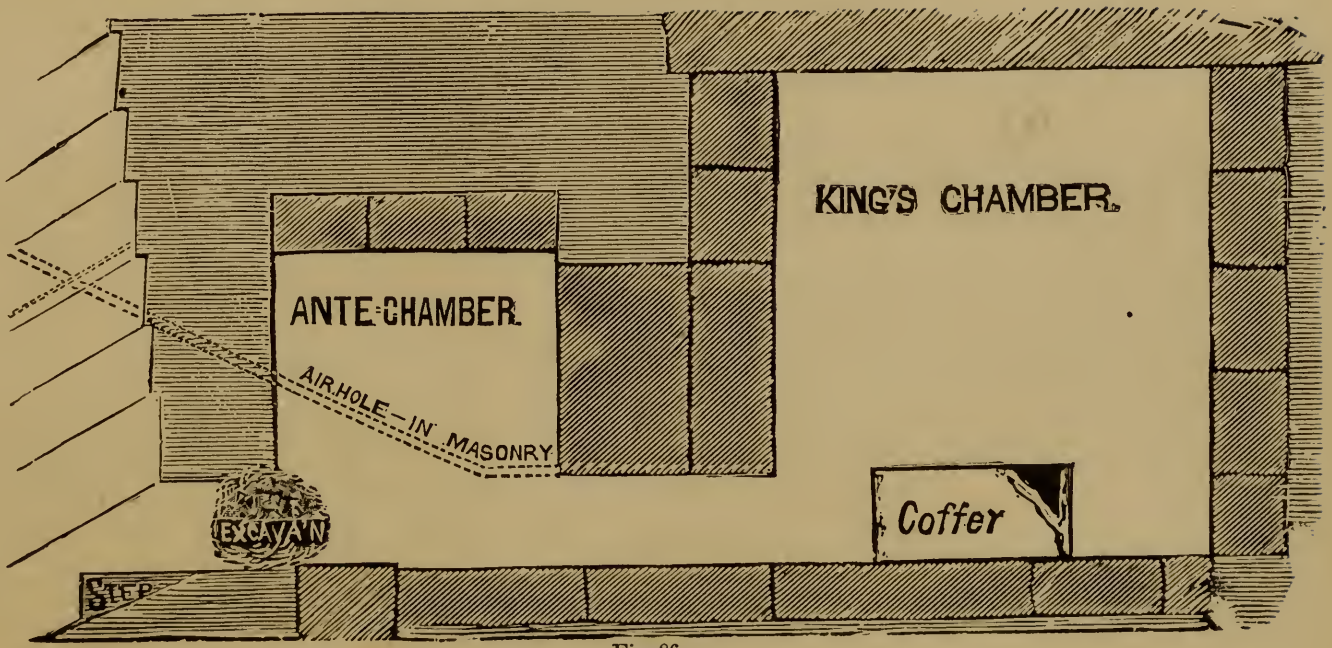
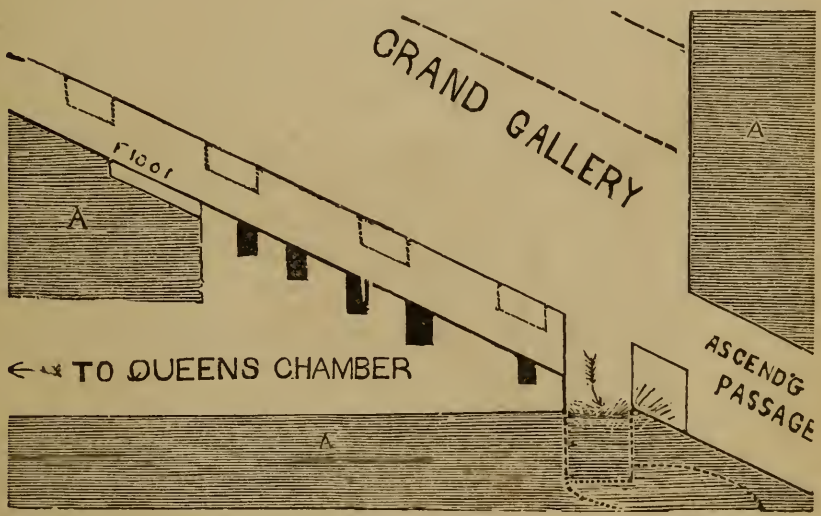

KING'S CHAMBER.
ANTE-CHAMBER.
AIR HOLE IN MASONRY
EXCAVATN
Coffer
STEP

Fig 86

These benches are known as "ramps," and are composed of regular layers of stones. A perspective view of them can be had in Fig. 51, B, and plane in Fig. 53. The second stone, on the west—or right hand side entering, has been forcibly removed. It is known as the missing ramp stone. Figs. 5[illegible] and 53. In 53 an arrow is seen pointing downwards. This is the *mouth of the well*, and it is about 25 inches beyond the entrance or north wall of Gallery. To center of this missing ramp stone is 35.3 inches.



F.g. 53. North or Lower end of Grand Gallery, showing entrance of Ascending Passage, west side. In line with perpendicular wall is the first ramp stone. The second has been torn away to give entrance to Well; remaining rampstones are continuous, forming the west bench, showing the ramp holes dotted. The (black) cavities under the ramps, are "little graves" in the side of the junction of Gr. Gallery and passage to Queen's Chamber. A, Masonry.

The well descends irregularly to the long descending passage, uniting with the latter not far from the subterranean chamber.

For about 26 feet the well is perpendicular,(after a ragged *detour* from the missing ramp hole). It then

becomes irregular again for 32.5 feet, when it opens out into an excavation, called the Grotto; from thence, down to the subterranean passage it is irregular. The perpendicular, finished portion is a mystery—why should it be thus at such a place?

The removal of the ramp stone is always a mystery—and one to which there appears no reasonable solution. It was taken out with great *force*. So much so that the hard rock was split, portions still adhering to the remaining stones, on either side. Had it been removed by those on the inside after dropping the portcullis, it does not at once appear reasonable to suppose that they would put the stone in at all. During all the time the well was excavating, if built contemporaneous to the other passages, the ramp stone could either have been left out, or very smoothly and skillfully removed. Again, the finished, perpendicular portions shows that *time was* taken for the work.

There is one theory that comes to mind: Cheops builds the Pyramid for the scientific and religious objects indicated by symbolisms. He also places a tomb chamber deeply under it. But when death approaches, he finds that the universal hatred of the priests will not allow him to rest in peace. So he keeps his men secretly at work at the "well," hastens its completion, and is carried by his faithful friends after death to the upper chamber. They then spring the mighty portcullis and creep out through the well.

This appears like very childish sophistry. Any one who sought his remains in the lower chamber could probably mount the same well by which the friends descended. To spring the portcullis was as easy a matter from the outside as from the inside—and save the trouble of making

the well. There was also a heavy stone cemented in front of the portcullis to disguise its presence. What was the need (with the Well, and the masonry to hide the passage) of a portcullis at all? What is the meaning of a 26-foot portion being finished, ragged at both extremities? The key to this Well is not yet in our hands.

The height of the Grand Gallery is 339.5 inches, and the roof is formed of 36 overlapping stones. (Fig. 85). Its length, to a certain step, 36 inches high, is 1812.986 in. (Fig. 51, G). But the length of the Grand Gallery floor to where the line of the ramps meet the south or upper end of the Gallery is 1881.6 inches. We generally speak of the Grand Gallery as 1881 inches long. Width 82.12 inches. Length on the graven line, 1878.4 inches.

THE RAMP HOLES.

Along the line where the floors of the ramps or benches meet the side walls of the Gallery, there are placed 28 little excavations on one side and 26 on the other. What they are for is a riddle. A few strange reasons have been supposed, but not one that is worthy an instant's attention. If not symbolical, as hereafter represented—then they were doubtless placed there by "chance" among the numberless "coincidences" some people imagine. The little mortices are called "ramp holes."

THE STEP.

Height, 36 inches. Horizontal, to south wall, 61 inches.

The upper end of the Grand Gallery is very peculiar in its structure. Before reaching the south wall, progress is interrupted by the vertical step, just referred to, which rises above the ramps. (Figs. 51, 54, 58, 72, 85). This singular step is 36 in. high, and 61 in. on its horizontal. It changes direction from the angle of the gallery, and its continuation through the masonry leads into the Antechamber. No structural requirement calls for this step,

and as the building, or passage, floor, roof, or walls did not demand it, its object must have been either symbolic or æsthetic. The latter it certainly is not; for a 3-foot step, interrupting the plan of construction, can hardly be called a thing of beauty? This step also hides or obscures one of the ramp holes—the 28th.

Another singular feature is that the south or upper end wall is not vertical. It "impends" or leans inward at an angle of 1°, so that the Gallery is longer in the center than on the ceiling. This also is required neither for beauty nor strength. This impending wall is also formed of overlapping stones, there being seven of them, between the step and the roof.

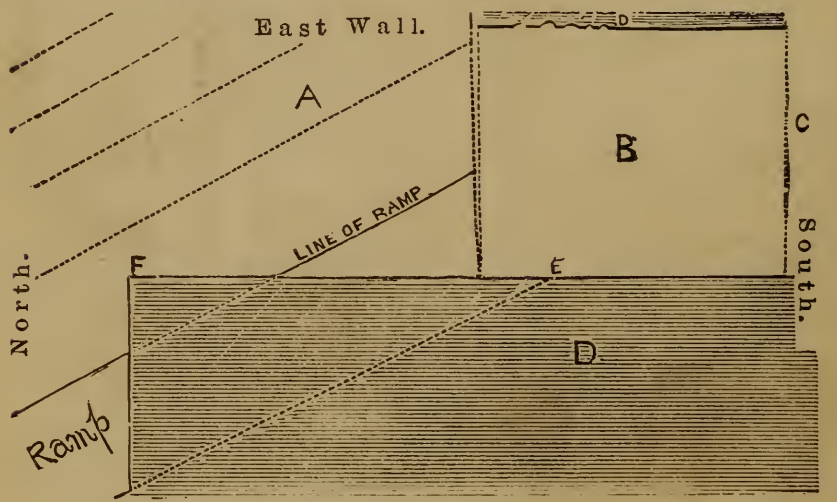


Fig. 54. D, Masonry. A, Upper end of Grand Gallery, dotted lines representing overhanging tiers of masonry on the side. B, Passage to Antechamber. C, Antechamber. E, Point where Floor of Gallery would intersect the passage floor. F, Corner of the Step. Dotted lines at head of Gallery represents the "impend" of the wall. East side.

The passage out of the Grand Gallery to the next room, the Antechamber, is 52.17 inches, or from beginning of great step, is 112.17 inches. It is 43.7 inches high, 41.4

wide. It opens into a room known as the Antechamber, a sort of waiting room to the King's Chamber beyond. The Antechamber is 116.26 inches long, 149.3 inches high, and 62.5 inches wide. It is thus, except in height, an enlargement of the passage. Its construction is very peculiar.

On either side of the Antechamber, as represented in Fig. 58 B, are four grooves, separated by small, narrow

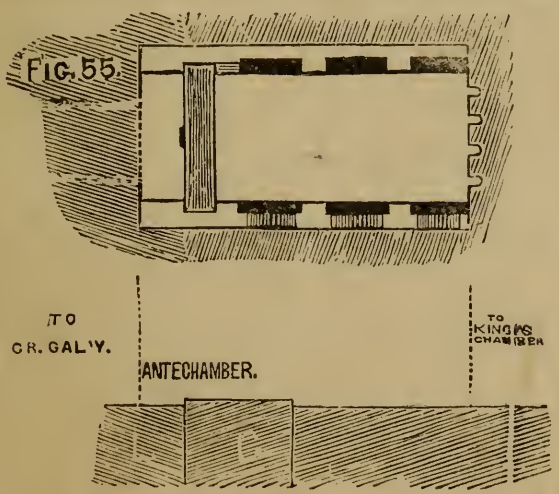


Fig. 56.

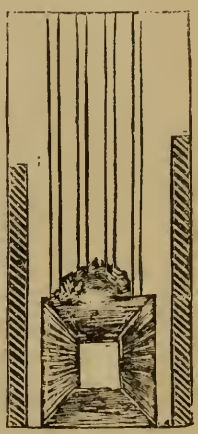


Fig. 57.

Fig. 55. Horizontal section of Antechamber. Black portions on the sides are the grooved sections. Dotted line is the entrance, and opposite are the four grooves over the exit, seen in 57. The change in shaded lines indicates the change from limestone to granite.

Fig. 56. Masonry of floor of Antechamber, showing elevated stone, and change from limestone to granite.

Fig. 57. South end of Antechamber, showing four grooves over the passage to King's Chamber.

reliefs or pilasters. These grooves extend up the sides three-fourths of the height. They, and the ridges between them, constitute a sort of wainscoting of granite, making the room several inches narrower. They appear very much as if made to slide portculli in. The portion divided off next to the north wall (58–K) is not grooved. In the

second portion there is a portcullis, as it is called, though not resembling one in function or shape. (A). It is secure in its position, stretching across the room at the same height as the entrance passage, and consists of two slabs of stone, the upper and lower firmly joined. If it were dropped, then a person would have to climb over it, but the entrance would not be occluded, there being 21 inches between it and the north wall. The three grooves (B), are now nearly obliterated by the barbarians, who hack at them for specimens. On the surface of this portcullis, or

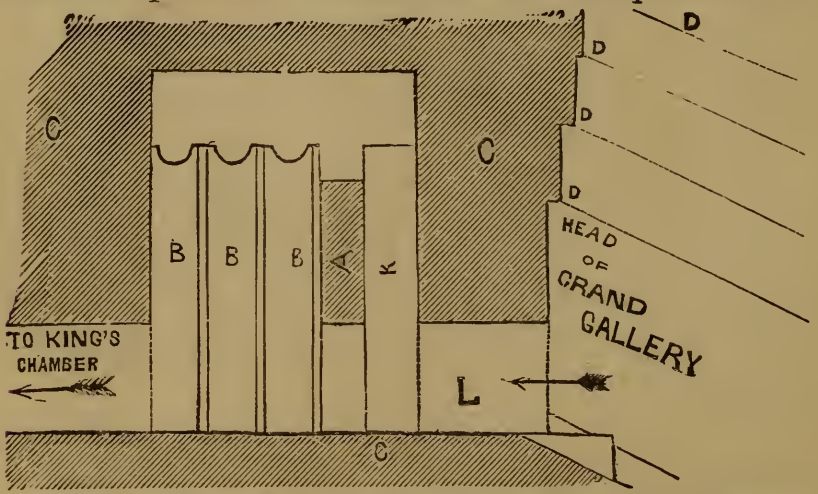


Fig. 58. The Antechamber and head of Grand Gallery. C, Masonry. B, Grooves in side of antechamber. A, Leaf or Portcullis. D, Overlapping tiers of masonry in sides of Gallery.

"Granite Leaf," as it is called, next the entrance, is a projection, or relief sculpture. It is sometimes called an embossing, and very much resembles a crude "handle," like those placed at the end of heavy boxes, to lift. It is about 7 x 5 inches long and broad. The south wall also has four grooves, as in Fig. 57, extending from the entrance up to the ceiling. They are narrow, and divide the wall into five nearly equal ridges. The opening has

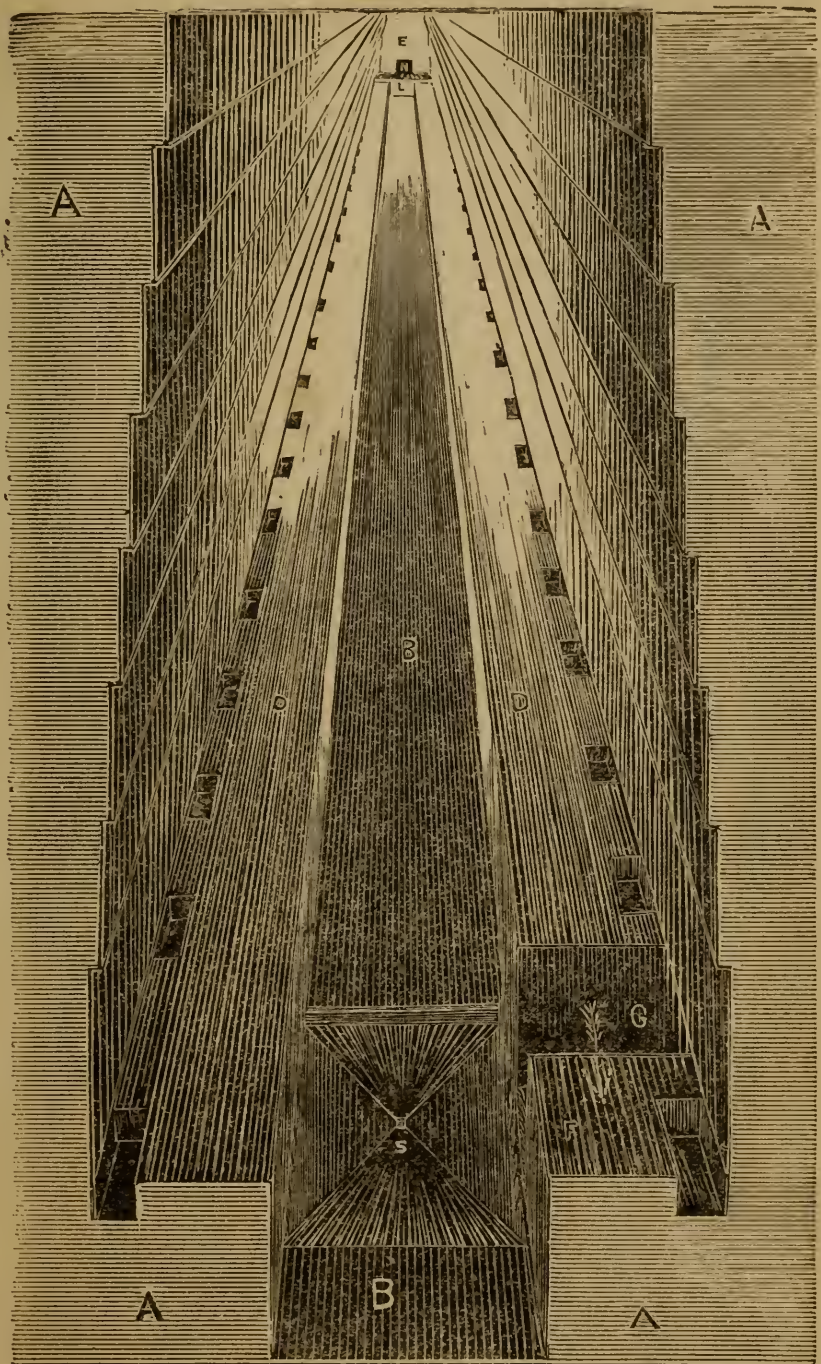


Fig. 59. Perspective of Grand Gallery, section at extreme north and lower end. A, Masonry. B B, Floor, interrupted by the horizontal passage, S, to Queen's Chamber. C, Missing Rampstone, arrow leading into the Well. D, Ramps or Benches. E, South Wall. L, Step. N, to Antechamber.

been considerably battered on its antechamber end. The north wall exhibits a rough, unfinished surface. It is composed of three massive stones.

The material of which the walls and general mass of the Great Pyramid are composed is limestone. But at this point, in the antechamber, we come in contact with a change for granite. This change appears to be methodical, and made with design to represent something—though *what*, is thus far undiscoverable. In the antechamber the floor is slightly raised for the distance of a single floorstone, (Fig. 56) where the granite begins. We do not keep a record of the changes from limestone to granite in the

Fig. 60. North wall of the King's Chamber, showing the stones forming the five tiers. Junction of floor and ceiling stones shown. A, Entrance from Antechamber. B, Northern air channel.

construction, but they may be ascertained by following Prof. Smyth's three volumes on "*Life and Work at the Great Pyramid.*"

THE KING'S CHAMBER.

Length, 412.14; Breadth, 206.1; Height, 229.90—Pyramid inches.

The passage out of the Antechamber is a continuation

of that into it. It is 100 inches in length, 43.7 in height, and 41.4 in breadth. It opens into the King's Chamber, a large and lofty room, apparently the principal interior construction of the Pyramid. It is 412.13 inches in length (east and west) 206.3 in breadth, north and south, and 230.1 high (Pyramid inches). Somewhat unlike the preceding room, it has no system of peculiar ridges, grooves or wainscots to vary the walls. They were very plain, smooth, polished, and exquisitely jointed. Its floor is on the 50th course of masonry from the base of the Pyramid. Its entrance is in the extreme lower, eastern corner of the north wall, as shown in Fig. 60. The surface of the walls and floors are very much marred by blows, scratches, marks and excavations. There are five tiers of masonry in the four sides, the upper tier being composed of very large, broad stones, the lower very much smaller. There are nine long stones stretching over it to form the ceiling, two of them at the extreme sides being only partially visible, as they extend over and beyond into the masonry of the sides. The joints, courses, and tiers of the King's Chamber have been a study, and enter largely into its mathematical relations to the whole.

On the north and south walls are two openings—the two air holes for ventilation, orifices that extend from the King's Chamber to the outer world, as seen in Fig. 43. That on the north wall is only about 8x5 inches, while that on the south is near 17x23 inches. The latter, however, farther within the masonry narrows down to about the proportions of the other. The north air or vent hole is 233 feet long, and rises at an angle of 33° 42′. The south hole is 174.25 feet long and rises at an angle of 45°.

Says Bonwick, "The King's Chamber is in spite of the spoliations, a beautiful, granite-walled apartment. Noble slabs of granite, 20 feet high, [the room not the slabs.]

admirably joined, line the sides. The roof is flat. There is no furniture but the ever mysterious Coffer or Sarcophagus." Greaves calls it a "rich and spacious chamber, in which art may seem to have contended with nature." It has been much mutilated in later years.

THE SARCOPHAGUS OR COFFER.

Length, outside, 90 inches; inside, 77.93 inches.
Breadth, outside, 38.65 inches; inside, 26.73 inches.
Height, 41.17 inches; Depth, 34.34 inches.

This is a hollow rock. It is very finely dressed, polished and excavated. Its outside length, (mean of variations of about .5-inch on the sides), 90.01 inches. Mean height, 41.17 inches; mean breadth, 38.65 inches. The west side and lower surface are slightly curved. Average thickness of sides, 5.99 inches; of bottom, 6.92 inches. It lies near the west side of the room, and is slightly removed from a north and south position.

This Coffer is made of porphory rock. Its purpose is a matter of contention. M. Jomard and others have considered it too small for a sarcophagus, while many have thought it too large. Its history is appealed to in vain! There is no record worth noting, of its ever containing a corpse. And yet there are sarcophagi in other "tombs" and pyramids of Egypt which resemble this Coffer. But the same may be said of the entire pyramids. The later structures may have mistaken the primary mission of the first in every aspect—or, it may have had its metric properties added to its functions as a coffin. If other pyramids, with their sarcophagi, were built first, and the kings of Egypt were in the habit of erecting such structures for burial, then, probably part of the mission of the Pyramid was to bury Cheops, with all its varied scientific accompaniments added thereto. But if the Great Pyramid were built first, by an invading shepherd race, and

the inferior giants about it were subsequent imitations, then was the monarch of mounds built primarily for scientific objects, and used as a tomb secondarily, if at all, and the imitators built in ignorance of the primary design.

Still, even this conclusion is at fault when we are so sure that *all* the Pyramids of Ghizeh were built by the same race; but it will apply to the native Egyptian pyramids, scattered through the valley.

One curious circumstance is notable, for it affects the theory that the use of the upper chamber, instead of the lower, for a tomb, was on account of fear of disturbance after death. That is—the coffer must have been *built in* while the Pyramid was rising, for it is larger than the passage! Thus we see that during all the years of the building of the upper half, this coffer was in its chamber; and if a tomb, would it have been secret to the army of laborers? Imagine the singular questioning of the multitude constructing that interior, with two large "burial chambers" in it when they had already run a shaft over 370 feet, down into the living rock, for the same object! Many Arabian writers contend that the coffer did contain a body. But Diodorus* said: "Although these kings (Cheops and his brother) intended these for their tombs, yet it happened that neither of them were buried there. . . . For the people being exasperated against them by reason of the toilsomeness of these works, and their cruelty and oppression, threatened to tear in pieces their dead bodies, and with ignominy to throw them out of their sepulchers: whereupon both of them dying, commanded their friends privately to bury them in another place."—(Greaves).

There are evidences that it once had a lid, the remains

*2,100 years after it was built. 400 after Herodotus—who could get no sure information from the Egyptians.

of grooves and pin-holes having been found. It was made of very resonant material, a blow from a hammer making a loud reverberating report. The vandalism of modern "ladies and gentlemen" has nearly destroyed its perfection and beauty by knocking off specimens to ornament some metropolitan mantel among works of *virtu*. It should be a mark of disgrace in any parlor or cabinet to find such fragments, nicely labelled. We see the destiny of this noble urn which has rested since history's dawn in polished outline: It is to be scattered over the fireplaces of civilized western hoodlums, who give the Arabs "baksheesh" for their blows upon its edges!

CHAMBERS OF CONSTRUCTION.

The King's Chamber is not arched or vaulted. It has only a flat roof, and the immense mass of masonry above appears to be sustained by the great slabs of stone which stretch across. But in 1763 Mr. Davison discovered that directly over the chamber, and almost of equal size, was a broad low cavity left in the rock. The entrance to this room was through a forced passage from the extreme southeastern upper corner of Grand Gallery, as shown in upper left hand corner of Fig. 43. That this passage had been forced indicated that the chamber was for ages—and intended to be for years to come, a sealed room. In 1837, Col. Vyse became convinced that there must be other resorts to remove superincumbent pressure than this single, flat room of equal size. He excavated upward along the east side of the ceiling, as seen in Fig. 61, and came successively to four more chambers; over the upper was a ridge roof of massive stones. The ceiling stones of the "Chambers of Construction," and King's Chamber are objects of interest. They are all of granite, even in the upper chamber. Those forming the ceiling of the King's Chamber are 326 inches long, 60 inches broad and

80 inches high. In all the chambers, especially the King's, they are highly polished and beautifully joined.

The most singular circumstance connected with the construction is that a design of some kind is evinced, beyond the matter of strength, in their method. The floor of each room is rough, unhewn. Yet the ceiling, which, as seen in Fig. 61, is not so high as the intervening stones themselves, is finely finished! In the second, third, fourth and upper chambers are quarry marks in hieroglyphs to guide the workmen in placing the stones.

They are not cut in, but merely daubs of red paint. It appears to us that these five chambers, the last links of space, apparently, in the mighty monument, are of great significance, and deserve study; it is a matter of regret that so accurate an observer as Piazzi Smyth did not enter them, during his "Life and Work," and devote time to their thorough examination.

The names of the chambers of construction, beginning with the lower, are Davison's, Wellington's, Nelson's, Arbuthnot's, and Campbell's. The upper, Col. Campbell's, has a "ridge" of "beautifully wrought" stones, which slope to each other at the peak.

The passage from Grand Gallery to Davison's chamber is 24 feet 9 inches long. From floor of King's Chamber to peak of Col. Campbell's chamber is 69 feet 3 inches. Davison's chamber is from 2 feet 6 in. to 3 feet 6 in. in height; Wellington's 2 feet 2 to 3 feet 8 inches; Nelson's from 2 feet to 4 feet 10 inches; Arbuthnot's from 1 foot 4 inches to 4 feet 5 inches; Campbell's from 5 feet 10 inches to 8 feet 7 inches in height.

Col. Howard Vyse found a piece of iron in the masonry which was transferred to the British Museum.

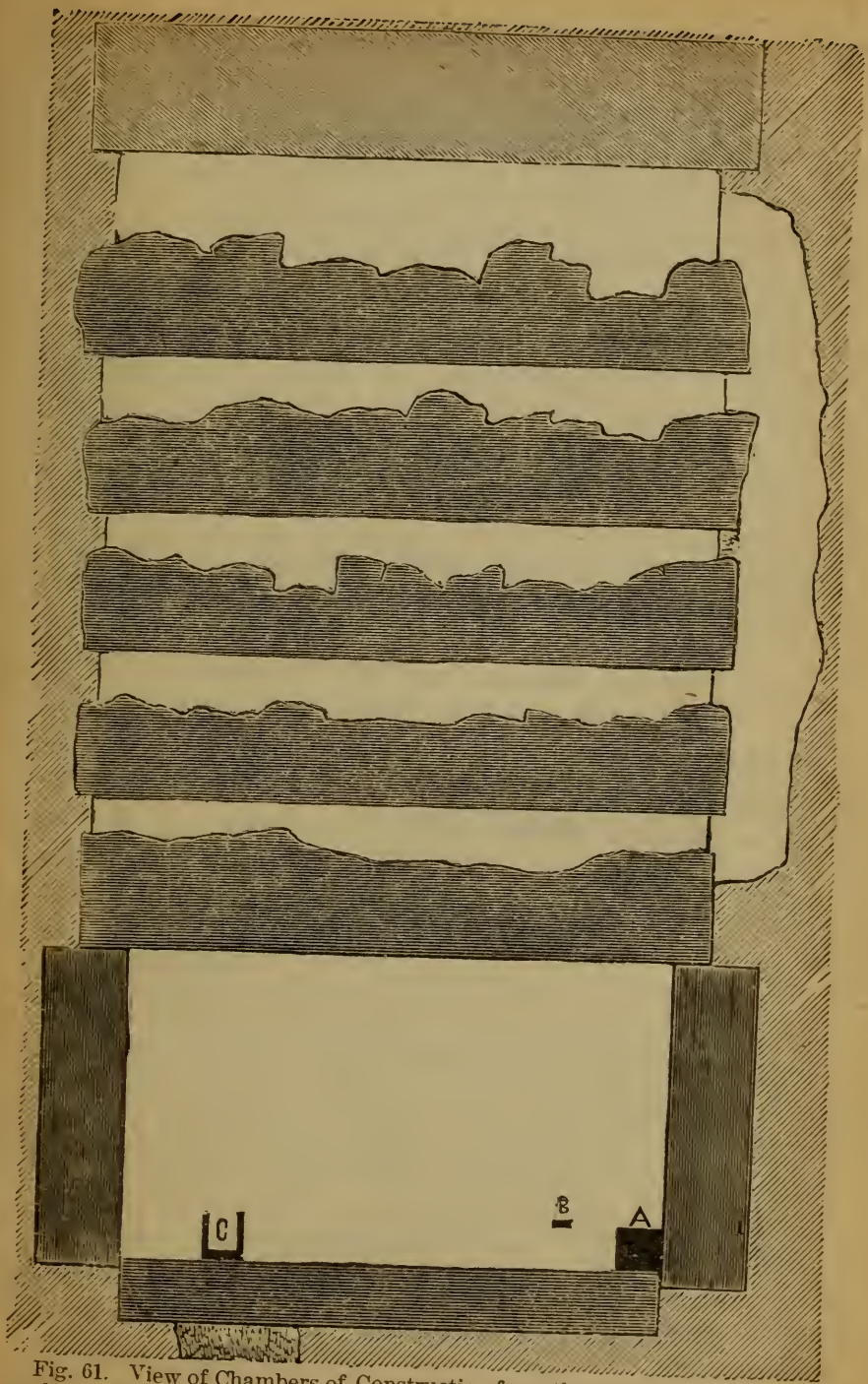


Fig. 61. View of Chambers of Construction from the south. East, or gable end view with Fig. 43. Irregular space to the left represents the excavation by which the chambers were discovered. A, Entrance passage into King's Chamber. B, air hole, and C the Coffer.

By the discovery of these Chambers of Construction a very important point was gained in the history of the Pyramid. Col. Howard Vyse, in 1837, discovered in the three upper chambers, on the faces of undressed stones, numerous hieroglyphics. They were red paint daubs, and demonstrated that there was a brush or pencil literature as well as stone literature at that time. Among these hieroglyphs were the cartouches of King Chofo, (Suphis, Shufu, or Cheops,) and Non-Chofo, (Nem-Shufu, or Sen-Suphis), the two brothers who are the supposed builders.

These ovals or cartouches are represented on page 29, Figs. 7 and 8.

The hidden hieroglyphs confirm the statement that the entire structure was free from stone hieroglyphs for some special reason. For these painted marks were undoubtedly to guide the workmen, and left in chambers closed, it was supposed, forever from human eyes. This shows that the whole building once had them for the same object. Their complete removal indicates that there was a *purpose* in their erasure. Nor do we have to look far for a legitimate purpose. It appears reasonable that there could have been but one object—to distinguish it in design, origin and theism from those monuments which do bear the imprint of the Egyptian chisel.

It is in these Chambers of Construction that many have hoped for a "Key" to the Pyramid. In view of their position—being the last known cavities in the chain; and the upward pointing of the higher chamber; the finished ceiling and rough flooring, indicating SOME purpose—these chambers should receive most critical attention. On the other hand, they have been conspicuously neglected. Their examination may yield a revelation. Even the entire system of upper passages was discovered by a *falling stone.* How much may yet remain for research?

THE QUEEN'S CHAMBER.

The floor:—East and west, 205.6 inches; north and south, 226.4 inches. Height, to gable, 244.16; to roof, 182.19. Pyramid inches.

There is a horizontal passage which leaves the ascending, just a few inches within the Grand Gallery; it passes southward, vertical to the passage above. (S, Fig. 59.) Its origin is 23 inches from the north or lower end of the Grand Gallery; being, therefore, very near to the missing ramp-stone and entrance to well. (Fig. 59.) The King's Chamber, it will be remembered, is on the 50th course of masonry. The Queen's Chamber rests or floors upon the 25th. To start out upon the 25th course it would have to leave the passage below the lower wall of the Gallery. But it was designed to start within the Gallery, close to

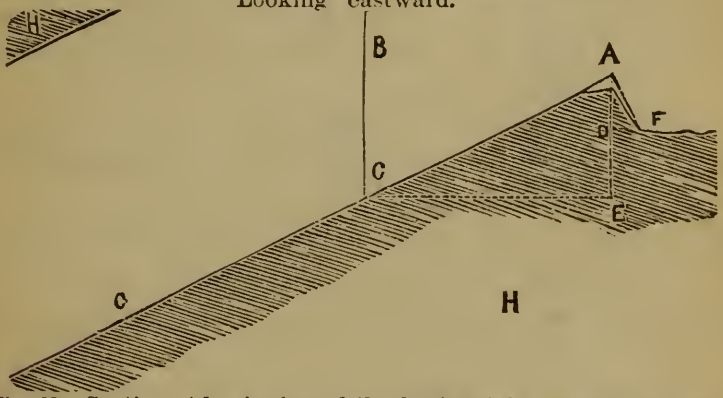


Fig. 62. Section at beginning of the horizontal passage leading to the Queen's Chamber. C C, ascending passage. B C, plumb line from north wall of Grand Gallery. A F, sinking 4.7 inches to first horizontal level, afterwards sinking below line C E. C to E, 19.9 inches. E to D, 6 inches.

the Well. Hence, it leaves the ascending passage, as noted, within the Gallery and sinks by two steps to the required level. (Figs. 62–64.) It will be noticed by Figs. 53 and 59 (where masonry, begins between the ascend-

ing and horizontal passage) that the floor of the horizontal passage continues some distance before the roof begins —that is the floor of the Grand Gallery is cut away, so that a person in ascending the Gallery has to climb upon the ramps or benches to get up to the floor of the Gallery again. Or, they may by great exertion, if long limbed, put their feet in the "little graves," holes in side of this passage, and "straddle-step" up to the floor and climb upon it.

The total of the horizontal passage, from the north wall of the Grand Gallery to the Queen's Chamber, is 1519.4 inches. At 765 inches is a small cylindrical hole in the floor, 8 inches in diameter, and 3 inches deep. At 945.3 is a hole in the middle of the floor, 4 inches in diameter and 4.5 deep. At 1122.5 inches, is a hole 3 inches in diameter, "filled with dirt," depth not given. At 1288 inches a hole 2.5 in diameter.

At 1303.3 from north wall of Gallery, is a sudden change of level in the passage, the roof remaining the same. The descent is about 20 inches.

The height of this passage may average 46.5 inches, until the change of level is reached, when its mean is 68 inches. Its width may be placed at 41.75 inches. The floor of this passage is, of course, limestone, of little value, and it is in an unfinished, unpolished condition.

As we enter the Queen's Chamber from the long passage, we find a large, ridge-roofed apartment, with walls of a fine species of white limestone. After visiting the Antechamber and King's Chamber, there is a feeling of disappointment in finding this room so inferior in finish. The floor is strewn with rubbish, the walls are less perfect, and there is a general impression produced that it is much inferior in appointments to the grander chambers above.

It has more of the "dungeon" air about it. Its roof is ridged east and west, the massive stones passing one hundred inches into the masonry of the side walls. What is the object of this no one can explain. Though the walls have not the granitic finish of the other chambers, and the floor irregular, the limestone is of an unusually fine quality, and the wall joints are exceedingly close.

The horizontal passage and the chamber walls exhibit a saline incrustation, as of nitre or salt. Although this condition is present in some of the smaller pyramids, it

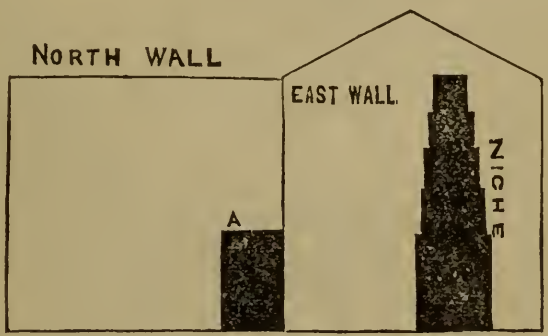


Fig. 63. Plane figure of east and north walls of Queen's Chamber Entrance at A.

does not pertain to the other passages and chambers. It is an indication of moisture, though it may proceed from an abundance of efflorescent salt in the cement.

The dimensions are as follows: East side, 205.6 inches; west side, 206 inches; south side, 227.2 inches; north side, 226.5 inches. Mean of the two sides:—East and west, 205.8; north and south, 225.7 inches. Mean of height, with ridge, 244.4 inches. Mean height, to ridge, 182.3 inches. Excavations are numerous, and smoke inscriptions deface it. The construction of this chamber does not confirm the opinion of those who believe the Pyramid

to have been built originally up to the 50th course only, (King's Chamber), and long afterward completed. For, were this so, the upper and not the lower chamber would have been poorly constructed. That this room and passage, amid such perfect work, should be so imperfect, certainly implies design; and a design beyond our ken, unless it be represented among the historical analogies hereafter presented.

In shape the Queen's chamber is a heptagon, having seven sides. The roof-sides are 226.7 inches long, same as sides, and 120.1 on the incline.

Ridge roofs were rare occurrences in Egypt, even for support. The large Pyramid ceilings were flat.

The most remarkable feature of the room is an immense niche in the east wall. It is a correct and workmanlike excavation, as represented in Figs. 63 and 64. Its height is 185.8 inches, and width at the base, 61.3 inches. It is composed of five sections of different widths, that next above the base being 52.3 inches wide; third section, 43.3 inches; fourth section, 34.3, and the upper 25.3 inches.

Its depth is nearly 41 inches, backed by masonry incidentally connected with its construction, which extends back into the Pyramid much farther than the strongest dungeon would require. At 38 inches above the floor, a shelf runs across the niche, above which a hole or excavation extends back into the masonry about 100 inches, all badly marred by recent excavations. The floor has been torn up, and the masonry dug out in several places, as seen in Fig. 64, probably for investigation, possibly in search for buried treasure.

On the whole, this chamber is an anomaly. The fact of the incrustations is singular. Nor is the wonder less when we find no incrustations in the other passages. All walls above the "Falling Stone," were subject to the same

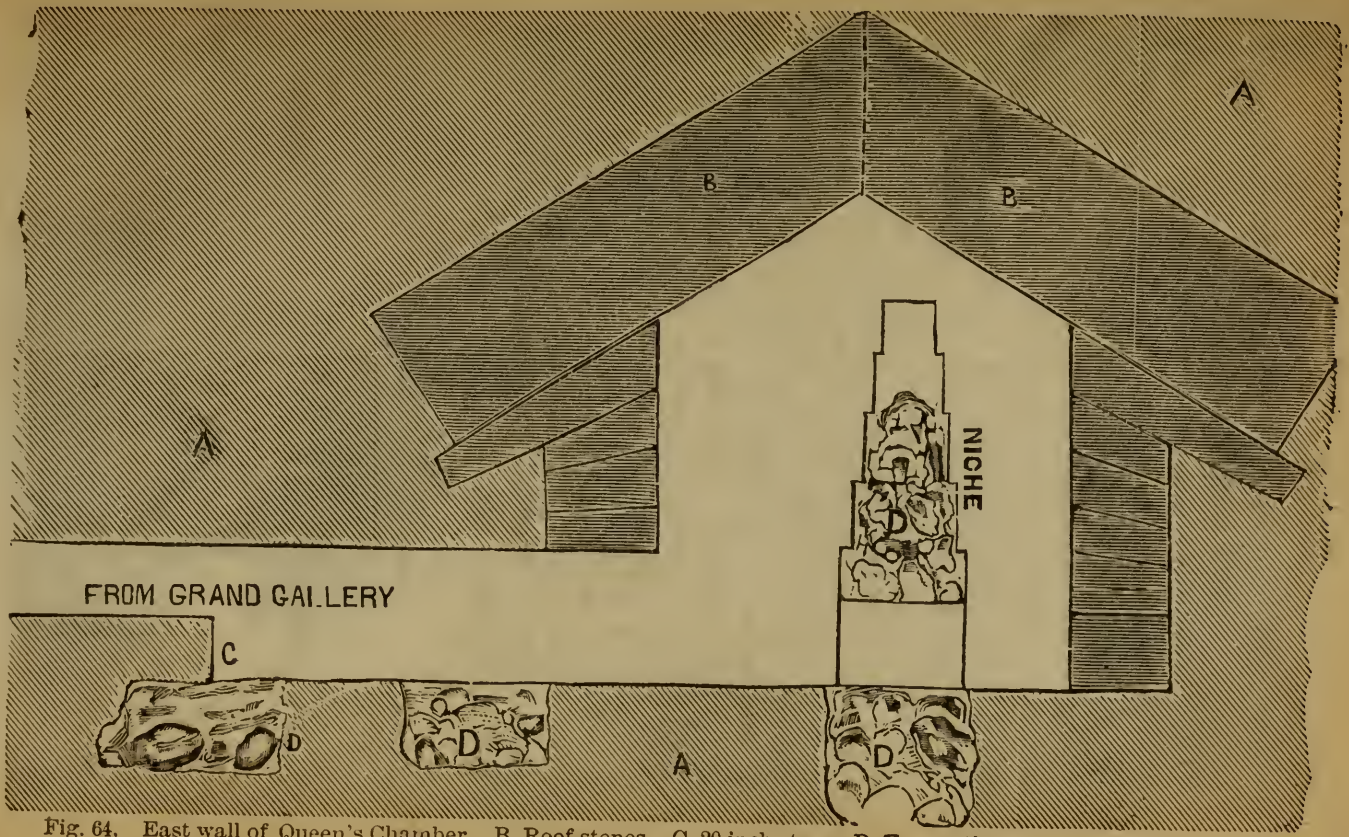


Fig. 64. East wall of Queen's Chamber. B, Roof stones. C, 20-inch step. D, Excavations.

influences, and both were closed by the same portcullis.

THE AZIMUTH TRENCHES.

"These azimuth trenches, then, are a sort of large open ditches, spread about here and there on the surface of the hill before the eastern face of the Great Pyramid; and not very noticeable, except for their relative angles in a horizontal plane; for these gave me the idea, at first sight, of being strangely similar to the dominant angles of the exterior of the Great Pyramid."—(*Smyth*).

There remains one thing more in "Parts and Proportions." It is supposed that a hidden chamber exists in the Pyramid, the discovery of which will throw light upon its meaning and mission. Among the various causes for this belief the symbolic is the greater.

At one place on the Pyramid hill are a multitude of chips of Black Diorite rock. No tomb in the hill, or discovered portion of the Pyramid, is built of this stone excepting a small place in the descending passage. Hence it is supposed the undiscovered chamber is lined with it.

This supposition is not unreasonable when we remember how closely the Pyramid itself was sealed, and how the entire upward channel was portcullised, and then the portcullis hidden by masonry.

Fig. 65.

THE MOTIVE.

Before taking up the analysis of the scientific and symbolic character of our subject there is a point worthy of close attention. It is possible, even extremely probable, that in some manner the Great Pyramid was built as a tomb. But a tomb could have been built with great elegance of design or with great simplicity, and still had no deviations from a complete, harmonious, and distinct plan. However crude in art or barbaric the artist—however lithe in design or cumbrous in conception, the effort is always to symmetry. The failure to attain symmetry may be complete. The curved lines may be monstrosities, the angles unfortunate—but the effort is there, and the proportion, also, though perhaps a very poor one. Thus, if the builders of the Pyramid designed a tomb with various chambers, and a heavy stone coffin, and finely built passages, it was not a difficult matter to build it. Labor and stone were in plenty. That they should have built such a tomb in certain measurements which represented many of the more modern and sublime problems in mathematics was singular, very singular. Yet the student is forced to admit that a few relations of feet to figures may have been coincidences. The universality reduces the probability, but still the possibility remains. Also, with regard to certain linings on the walls at such distances as would represent dates, or with proportions of size which give astronomical truths, they *may* all have been coincidental.

There must have been a motive in these relations. The very "starting point;" that is, the taking accidentally of a certain angle as the basic proportion, could not induce the subsequent measurements. No one will believe it did so happen. Driven by accumulation of better evidence than has developed the doctrine of evolution, other and hasty hypotheses are assumed. (vide, Prof. Proctor.)

This coincidental theory is advanced by a few Pyramid students. Their number is daily lessening. It is true that the coincidental may, amid a thousand million chances, have ruled the progress of its erection in the purely figurative expression of its volume and contents.

But in morphology there are no coincidences. There must be a motive. Not a leaf figures its microscopic shape but from motive in a physical sense. A child cannot whittle a stick without having in mind some contour to produce. There are parts of the mighty Pyramid which never could have been introduced without a *motive.*

We pass by the angles, the star angles of descent and ascent—the portcullis, its singular sealing—the well, its partly finished condition, etc. The benches or ramps, the ramp holes, the step, the raised stone in the floor, the unfinished and finished walls, the singular antechamber, etc., etc. Many of these are actual obstacles. Could these "obstacles" be placed there without a *motive?* And if a motive, what could it have been but to represent something for whosoever unearthed it in future ages? Take the granite leaf in the Antechamber. It is a couple of heavy strips, finely joined, stretched across a room just where it could possibly have no architectural object. It has been called a portcullis. The foolishness thereof is inexpressible. If it *could* slide, it would interrupt no passage. But it cannot; it rests at either end, in the

sides of the room, on good solid granite. And what of the relief sculpture like a handle, on it? A 7 inch handle in the Pyramid? We might mention the slight elevation so cleanly cut in floor of Antechamber, and other equally singular features. These all point to a motive, and place the interior construction of the Pyramid far beyond the coincidental, for these elements are only factors in a grand whole, and whatever may have been the motive for the great step, was the motive also for the thousand singular proportions which a few hardy disputants relegate to the coincidental.

It is not claimed that the motive of the building is yet discovered, but multitudes of the details have been appropriated, and those, in a measure, we will try to represent.

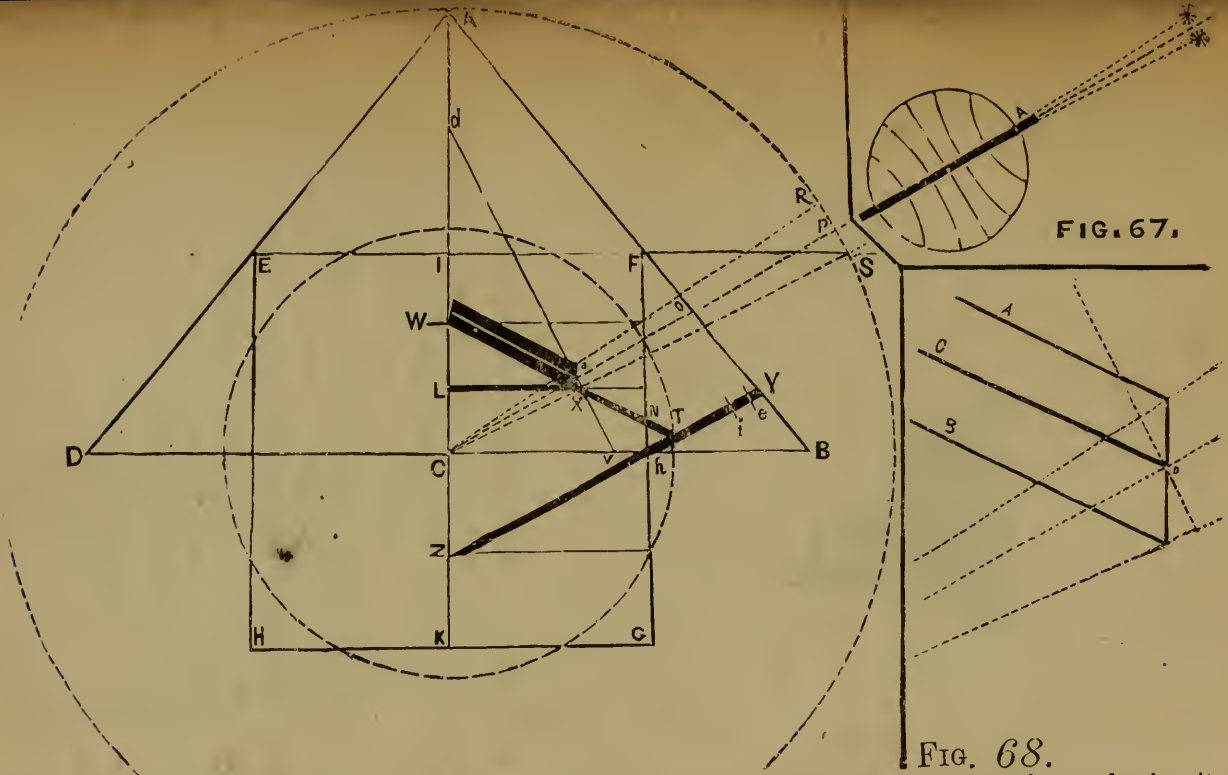


FIG. 67.

FIG. 68.

Fig. 66. A B D, the Pyramid angles. A C, the vertical. D B, the base. E F G H, a square of equal area, having its centre at the centre of the Pyramid's base, C. If the square I F C h be trisected at W and L, then W will represent the level of the King's Chamber, and L the level of the Queen's Chamber. C S represents the lower culmination of the pole star, by a line drawn from centre of base. C R, upper culmination, C p, the actual pole. Fig. 68 shows how these lines intersect the north end of Grand Gallery on a larger scale, A being the roof, B the floor, and C the graven line on centre of wall. v d pointed to Alcyone and intersected the graven line. (Seen in 68). Fig. 67 shows the relation between the polar axis and the two positions of Draconis.

SYMBOLIC ANALYSIS.

CHRONOLOGY.

It is confidently asserted that the Channels of the Great Pyramid represent the important events in history; but more particularly the varied course of that great stream of theosophy which originated in the earliest epoch, and subsequently became the mission of the Jewish race—to perpetuate until the time of Jesus Christ.

We now come to the most remarkable series of scientific demonstrations of a religious proposition that the philosopher has ever pondered over. Science has thus been made the exponent of religion. Never has prophecy held the reigns over positive philosophy, as she thus holds mathematics as a factor in the demonstration of the religious symbolism of the Pyramid.

The great proposition upon which the Chronology of the Pyramid is based, and also upon which the apparent prophecy depends, is that an *inch* represents a year. This is an important proposition. Of course this foundation, alone, would not stand unless sustained by very strong evidence—such as appeals directly to the mathematical rather than the speculative faculty; and having a reasonable demonstration that the inch does represent one year, many flaws in a chain of events will not destroy the probable involution of the principle.

The basis for the inch-year proposition is startling in its distinctness.

The longest measurement in the Pyramid, in inches,

is equal to the longest measurement of time in the universe, as known to us. The longest measurement is the diagonal of the base. The base surface is a square having 9131 inches on a side, and its diagonal is consequently 12,913.34 inches. There are two of these diagonals, and together they make exactly 25,826.68 inches. (Fig. 70.)

Is there any thing remarkable in this number? There are two years known in the measurement of time. One, the solar year, is the revolution of the earth about the

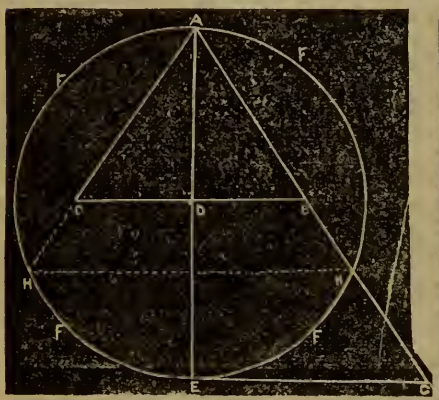


Fig. 69.

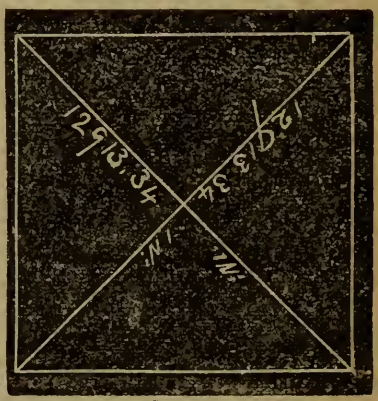


Fig. 70.

Fig. 69. A, B, C, Portion of the Pyramid above floor of King's Chamber. A, H, H, The entire Pyramid. A, D, Vertical, which is a radius of 4110.5 inches. Continued to E is the diameter of the circle F, 25,826.68 inches in circumference. C, D, is also one side of a square, (6456.75 inches), the four sides of which equal 25,826.68 inches.

Fig. 70. Square base of the Pyramid, 9131 inches on a side, and two diagonals of 12913.34 inches each.

sun. It takes 365.242 days for the circuit. But the longest measurement of time known to us is the "Precessional Cycle." This is the revolution of the whole starry host about an *apparent* axis, the star Alcyone, of the Group Pleiades. This is observed by the fact that the stars rise about 50 seconds *later*, each year. For this complete circuit of the heavens, (apparently around Alcyone), and the close of the cycle, it requires just 25,826.68 years. Singular that the longest linear agrees with the longest circle

time—counting inches for years? One relation of this kind may be coincidental. In this problem just given we present the evidence of the dominant or principal square in the Pyramid, its two diagonals giving the above result; each diagonal is, of course, the hypothenuse of a *triangle*, and the result may be called the demonstration of the triangle.

Jas. French says:—"We would look, however, for the demonstration of a circle, in a problem involving the revolution of the heavens." On the level of the King's Chamber, at the 50th course of masonry, this is secured.

It will hereafter appear that this level is an important point for measurements, giving ample reason for looking to it for the solution of such a problem. The discovery was made by Prof. Hamilton L. Smith, of Geneva, N. Y. The height of the Pyramid, above the level of the King's Chamber floor is 4110.5. This is the radius of a circle which is equal in measurement to the perimeter of the square at the point of truncation—that is, the surface of the base of a pyramid, cut off at the floor of the King's Chamber, (or the top surface of the truncated pyramid left when it is removed,) is 6456.67 on a side.

We mention this to show that this radius (the 4110.5) is not taken hap-hazard, but of all radii presented, is *the* one to be chosen—the radius producing a circle equal to the base of a pyramid whose vertical it is. This radius of 4110. 5 doubled for a diameter and multiplied by 3.14159 to get the circumference, = 25.827 inches, the length of the precessional cycle. This is the demonstration of a *circle*.

Now among the dominant measurements of the Pyramid, as already mentioned, is the level of the King's Chamber floor. On the outside of the square, each side gives 6456.67 inches. The four sides give, as before,

the consummation of the greatest cycle of time—exactly 25,826.68 years are required. Is it singular that the longest linear of the Pyramid should agree with the circle of 25.827 inches? This is the demonstration of the *square*.

Thus the testimony of the triangle, circle and square evidences the time values of linear measures in the Pyramid.

There are other propositions which indicate that the inch may represent a year. For instance, a certain mark in the wall in the descending passage is at such a distance in inches from the north wall of the Grand Gallery, that 412.55 inches (length of King's Chamber) added to it, will give the precessional number 25,827 in tenths.

These demonstrations of the relation of length to time are greatly strengthened by the time data of other parts of the Pyramid, as given on another page. For instance, the base of the Pyramid is a number of which the days and the fraction of a day in a year is a factor together with the ancient sacred cubit. (365.242x25=9131).

Supposing it to be fairly demonstrated that an inch linear represents a year, the next step is equally difficult to establish,—where shall the era of the world's history begin? And when the starting point is found, the great events of history must correspond exactly with it. Thus, with the above inch-year demonstrated; a reasonable starting point proposed; and the greatest events of time filled into the various niches,—it is not difficult to believe the chronological import of the Pyramid. If a person were called upon to state what event had modified and controlled the current of history, antecedent and subsequent, more than any other—be he theist or atheist—there could be but one answer. The world's hopes, as developed and "chrysalized" in every known religion, looked forward to a

Prince in the religious sphere who was to redeem humanity. Every war for 18 hundred years has turned upon the Birth of Christ, or been modified by the creed of his Church. Every political intrigue, and every national constitution is shadowed by the cross or crescent, both of which proclaim Christ the "Greatest of Prophets."

This is the one event which has universally modified history, *both antecedent and subsequent.* It may be either the Birth or *Death* of Christ. Whatever may be our belief in reference to the mission, the historical importance of his appearance is paramount. From a religious standpoint the Birth is recognized as the beginning of the era, from the fact of prophecy pointing to that time, and the "star in the east" then appearing. From a purely historical standpoint its importance is testified by the beginning of a new chronology in Christendom.

The point selected on general principles to represent the Birth of Christ is the north wall of the Grand Gallery. This selection is borne out, first, by its "fitting" other events and marks; and, second, by a peculiar astronomical proof.

During the 25,827 years of the precessional cycle the pole star, or nearest pole star, changes. At or about the supposed date of the building of the Pyramid the pole star was *a* Draconis. This star, however, was 3°42′ away from the real pole of the heavens, and the revolution of the earth about its axis would make it appear sometimes 3°42′ above, and again 3°42′ below the real polar point, a difference of 7°24′. Inclination of the earth's axis being 30°, the upper culmination of Draconis was 33°41′24″. Its lower culmination was 26° 18′ 10″.

This lower culmination is very nearly the line of the descending passage. If a line be drawn as from C to S,

(Fig. 66) from the base center of the Pyramid toward Draconis at its lower culmination, S, it will pass through the intersection of floor and north wall at the extreme lower and northern point of the Grand Gallery, (on a surface "elevation," as in the figure). Another line drawn from C to R, towards Draconis at its upper culmination will pass through the intersection of the roof and north or lower end of Grand Gallery. Now this may be taken as evidence that the beginning of the Grand Gallery was an important point in the Pyramid measures. But to make it still more important, or to indicate that this position of the Grand Gallery was not accidental, if we draw a line from C to the exact north pole of the heavens, parallel to the earth's inclination it will pass through the end of the Grand Gallery midway from floor to roof—and at this point a long line, extending the full length of the Gallery is graven in the rock! This line is 1878.4 inches long; in relation to the symbolisms of the Gallery it may indicate the beginning in 1878 of the influence of the great perihelia of planets in 1881, a most remarkable astronomical "landmark."

This evidence of the importance of the North end of the Grand Gallery is not complete, however, until a line is drawn on the plate, from V to *d*, intersecting X and pointing to Alcyone, the star around which the precessional cycle occurs. It will also intersect the graven line at the same point as the 30° line from C to P.

Another prominent reason for taking the north wall of Gallery for Birth point of Christ is the following:

From the north wall down to the ascending passage to junction of descending, up descending, a total distance of 2170.536 inches, is a line graven in the wall of the *passage*, seen at *i*, Fig. 66. If the length of the King's Cham-

ber be added to this (412.132 inches) the total is 2582.-668 inches, just one tenth of the precessional cycle.

The great value of this incident is that the number 25,826.68 could not bear a relation to so many measurements without design.

Admitting that the location of zero in our chronology is at the north wall, and every inch is equal to one year, let us see what dates are recorded:

Down ascending passage to floor junction of descending passage, (Fig. 71), from H to I is 1291.2 inches, H to O is 1482, H to L 1542. From C, (the axis line of pas-

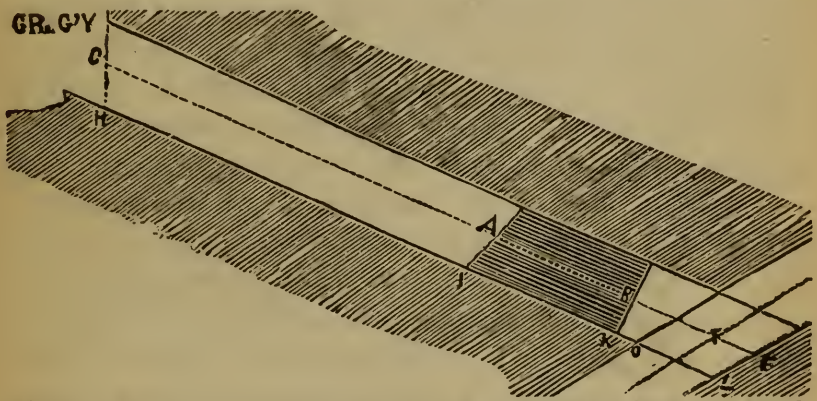


Fig. 71. Measurements at the junction of the passages from the north wall of Grand Gallery. C, A, B, F, E, Axis of ascending passage—which is shortened in the figure. Upper end of Portcullis as at present chipped away.

sage) to F is 1532.8, and to E is 1562.8 inches. We would take the dominant measure to be the floor line from H to L. These are English inches excepting from H to L, which are Pyramid inches.

Now these dates must be B. C., and 1542 is the supposed date of the "Burning Bush," at which time Moses received his first mission to take the children of Israel out of Egypt. 1482 is very nearly the date of the Exodus. Thence passing up the descending passage to the extreme point of the present floor—or to where it met the layer

of rock which backed the casing stones, we reach 2527 inches, which is represented as the "Dispersion," or the breaking up of the human race into different nations. Although these dates are far from being well established, and fall short of the demonstration given to the inch-year proposition, still one or two quite remarkable incidents have occurred in discovering them.

Mr. Casey, a Pyramid student of great application, wrote to Prof. Smyth that if these passages were chronological they certainly would have some mark to indicate its own erection. And as the date of the erection had been almost positively fixed at the beginning of the precessional cycle in 2170 B. C., Mr. Casey added, "According to this theory [inch-year] that date must be three or four hundred inches down inside the top or mouth of the entrance passage. Is there any mark at that point?"

The Astronomer Royal hastened to his notes, computed the distance, and lo! There graven in the wall, on either side, was a line *perpendicular to floor of passage*, as seen in Fig. 48, 2170 inches from the Grand Gallery! No one will be so foolish as to suppose *chance* engraved these lines!

The next feature after the birth of Christ, or the north wall, is the Crucifixion, and just 33 inches up the Grand Gallery is the mouth of the Well, descending down into the Subterranean Chamber, or the grave. The analogy is carried still farther by the forcible removal of the ramp stone to get to the well, (p. 87). There are many features about this Gallery that are appropriated for symbols of the Christian dispensation. Some of them are exceedingly imaginative. The ramp holes being open, are designated as graves, open because Christ has opened them by his death. Against each ramp hole in the wall is set a finely

cut stone of certain height. This is represented as symbolizing the flight of the soul. The size of the ramp holes is 7 by 8 inches. Seven is, in mystic numbers, the sign of the consummation, and eight refers to new life. The seven tiers of overlapping stones, either side, are referred to the seven churches of Asia. The 36 roof-stones are supposed to represent the 36 months of Christ's ministry, extended over the entire period of the Christian dispensation. Whatever the future of the Pyramid's chronology, at present it is a tangled thread, with a few gleams in the shape of dates which fit the inches, but removed apparently from connecting links.*

There are many strong analogies, but liable to error—which time alone can correct. The upper end of the Grand Gallery, with its three foot step, is made to yield a multitude of coincidences connected with the advancement of civilization, religion, and human freedom, during this latter day. Probably a most important part is the "impending" wall at the south end, (p. 90), and the narrow passage beyond, which symbolizes the closure of the present epoch, and the end of the age, though not the world.† The narrowness of the passage out of the Grand Gallery signifies great tribulation to fall upon the earth from 1881-2 to 1886. As this is the age of the great planetary perihelia, the probabilities of its correct prophecies are startling indeed.

CHRONOLOGICAL NOTES.

The length of the Grand Gallery on the graven line, is only 1878.4 years or inches, due to "impend" of 1°, (Fig.

*Thos. Wilson, of Chicago, has recently developed a geometrical relation of the Pyramid to Chronology by which a number of remarkable dates are correlated by triangulation.

†In this connection it is a fact that astrologers, modern "prophets," interpreters of Biblical age-prophecies, the "Latter-day Saints" of Utah, and the modern Spiritualist, have looked and look to 1881-5 with interest.

72.) The Evangelical Alliance was formed at that time. The length of Grand Gallery on the floor, from the north wall to step at A, is 1812.986 inches. The base measure of the Pyramid, 9131.05 inches, divided by five* is equal to 1826.21, which reaches to R, on an imaginary continuation of floor line. R is 13.224 from A. This is also the distance from L to M. The full Gallery length,

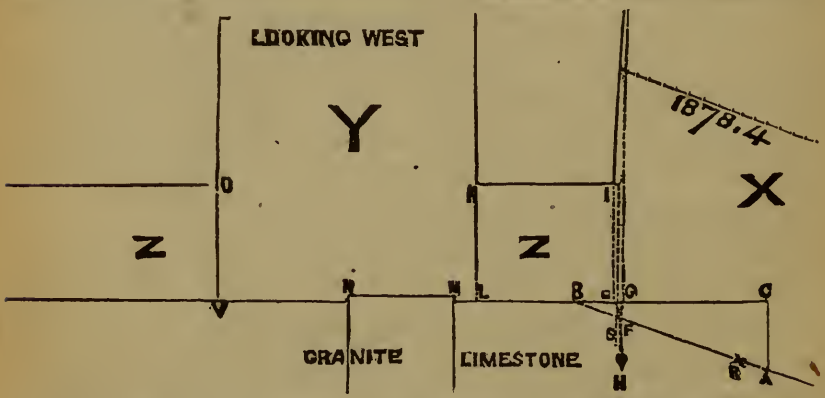


Fig. 72. Chronology of the Antechamber, etc. X, Grand Gallery. Y, Antechamber. Z, Passages. H, Plumb line showing the impend of south wall of Grand Gallery.

1878.4—1826.21=52.19. This is also the length of the passage E to L, or I to K. The coincidence indicates some significance in the date.

The north wall of the Antechamber is rough, unfinished. The other sides are finely finished. This indicates that the north wall is not used for the same purposes as the others, and we naturally take it to be chronologically misplaced. This displacement is put at 55.74 inches, for this reason: The entire length of the Antechamber is 116.26 inches. From M to N, the first granite block, the floor is raised 3-10ths of an inch. The north wall being displaced, it is natural to connect this raised stone with its correction. From N to V is a distance of 55.74. If the

*Five is what is called a "Pyramid number." That is, five enters into its construction so often as to call attention thereto. It has five sides. The King's Chamber is on the 50th course of masonry; the Queen's is on the 25th. The King's Chamber has five tiers of masonry in its walls, so placed with great precision. Various other instances are noted.

south wall (v) be brought forward to N, the displaced wall will reach to S, 3.55 inches into the Gallery, leaving a wall over 3 inches thick, from S to where the Gallery wall would be if vertical, (the line F).

We differ somewhat from this view. The granite elevation would extend to L if the explanation be— that the entire Antechamber was to be moved. The south wall would then also be roughened. The elevation indicates that both M and N have an import. The extreme end of the entrance passage (Fig. 48) is 2527 inch-years from the north wall. 55.74 inches added to it gives the precessional cycle, within a small error, as obtained by 2170+412.132, (p. 116). The latter equation shows that nearly 56 inches more are required in the channel line. From N to V supplies the deficiency. But how about the displaced wall? From L to M is 13+inches. If the unfinished L were placed at M, against the elevation and the beginning of the granite, what displacements would it correct? It would put G over B, where it architecturally belongs! And chronologically it would bring A to R, in accordance with the note on page 122.

Several recent works on chronology unite upon 4104 B. C. as the limit of man's history. The 6000 years of the Bible would then terminate in 1896. The Gallery floor to A gives 1812.986 years, and computed to B, 1896.1785.* B is the north and south *vertical center of the Pyramid.*

2582.668, the precessional cycle in tenths, added to the width of the King's Chamber, 206.066,=2788.734, the time set by Prof. Smyth, astronomically, for the Flood.

25,826.68 inch-years, the great cycle, divided by 25, (the number of inches in a sacred cubit)=1033.0672; the 1000 years are symbolical, and the odd 33.0672 equals 33 years, 24 days, and 13 hours, the time of Christ's ministry on earth. Single coincidences are slight evidences, but two distinct and separate coincidences in the same problem, pointing to the same conclusion, show that somewhere in the mazes is a thread connecting and corroborating them. Hence this relative coincidence has a value: 116.26 inch-

*This measurement to A and from A to B has since been modified so that B represents 1894.

years, (length of Antechamber) — 83.1925, (the inch-years from A to B) also =33.067+.

The chronological import of the Queen's Chamber and its passage, is involved in even greater doubt than the upper channel. Some writers believe its rough, horizontal plane and rugged outline represents the career of the Jews, as distinct from Christendom. We will suggest that if the modern theory of identity between the lost ten tribes of Israel and the Anglo-Saxon race be true, that the diverging channels, which deviate at the symbol of the death of Christ, represent the history of both branches of the great Semitic race.

It is objected that their history could not be contemporaneously represented by passages which differ in length.

Mr. Thomas Wilson, a prominent and careful Pyramid student, claims* that the horizontal passage goes 25 Pin. beyond the vertical axis which strikes the upper passage

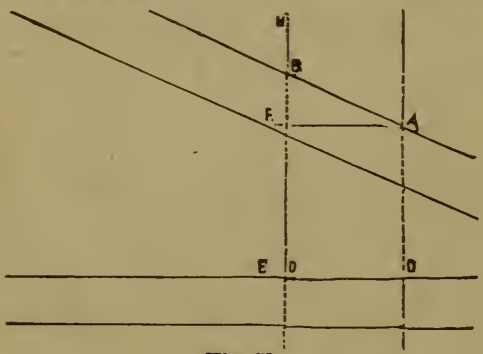


Fig. 73.

at B, Fig. 72. But he also states that the year-space in the lower passage is 1.115 inches instead of one inch. We presume this is represented in Fig. 73. A B is a line on the incline. The same distance carried horizontally will extend to F, or C D becomes C E. Hence, the horizontal passage must be longer contemporaneously.

But is it true that the inch year should be lengthened? If modified at all should it not be *shorter* on the horizon-

*"Our Rest," June, 1879. A journal devoted to Pyramid study. Thomas Wilson, Publisher, Chicago.

tal? Does not the horizontal inch extend .115 farther into a chronologically constructed *whole Pyramid* than the inclined inch—and therefore compass too much? On the other hand, is not the modification of the inch in any direction destructive of the very process by which the inch-year is established? This change of values also requires alteration of the time measures on the plane of the Antechamber. Still again, the vertical axis is not a factor, justly, in this mensuration, when it passes many feet to the west without intersection. Even though it did intersect, its point on the passages is a matter of dispute between Jomard, Vyse, Wilkinson, Smyth, etc. It is possible that the termination of the horizontal passage may represent the end of the Jewish wanderings, and restoration to their own land, Palestine.*

The Flood.—If our race were nearly or quite destroyed by a Flood in ages past, the Pyramid would certainly record it. Prof. Smyth has reasoned from certain physical and astronomical data that the Flood occurred 2800 B. C. Bishop Usher's Biblical chronology gives it 2349 and other versions 3246 B.C. The mean of these is 2797. The Pyramid has a significant feature which points directly to this event. As already noticed, the entrance passage is too short by nearly 56 inches to chronicle the Great Year of the Pleiades. Then it is too short to denote the Flood. But for some reason the masonry at the outer end is *doubled* upon itself. (Fig. 48). This fold is 216 inches, which added to the outer end, 2527, gives 2743—the year of the Deluge—the beginning of the history of the present inhabitants of the earth.

ASTRONOMICAL RELATIONS.

The entrance angle of the Great Pyramid is such that in the year 2170 B. C. the then North Star *a* Draconis,

*Recent political and meteorological conditions point to this with startling distinctness: The close of the prophetic season of tribul tion; the decay of the Ottoman Empire; the imperial influence of D'Israeli on the Eastern Question; the past due mortgages which the Rothchilds hold on Palestine, which the Turkish Government does not attempt to pay; the great change in the climate of Palestine, rainfalls being again abundant, and her vineyards blooming as of old—all are "signs" of an approaching change in Jewish history.

shone directly down its dreary length—to the subterranean Chamber. No other light than the dim radiance of "The Dragon" ever penetrated it. At the same time, 2170 B. C., the axis star of the heavens, Alcyone, shone brightly over the apex. This occurs, as indicated before, once in 25,826.68 years. Alcyone was the Greek "Halcyon,"—happy star. As Alcyone was Queen of the Pleiades, their "sweet influences" (Job) were peculiarly the Great Pyramid's benediction. This year, (2170 B. C.), the year of the Pyramid's erection, confirmed by the graven line in descending passage, was known in astronomy as the "Great Year of the Pleiades."

SUN'S DISTANCE.—The angle of the Pyramid's sides is such that for every nine inches of vertical the side measurement is 10. Also the diagonal of the base, given in Fig. 70, bears the same relation to the sides. Now the vertical height of the Pyramid, 5813 inches, multiplied by 10 raised to the 9th power equals 5,819,000,000,000 inches, which are equal to 91,840,270 miles, the correct distance of the sun from the earth!

Regarding this figure, there has been much discussion in the astronomical world. When the sun's distance from us was first given by astronomical computation, the received opinion of the *savants* was 95,000,000 miles, and the former estimate received no little ridicule. The latter number had even been increased by what were then recent calculations. A writer in "*Our Rest*" compends the history of "sun science" as follows: "The ancients estimated the distance of the sun from the earth at 10 miles;* it was increased afterward to 10,000 miles; then it ran up to about 2,500,000; it then took another leap to

*He might have said "the ancient Egyptians," for such was the case until more than a thousand years after the Pyramid was built.

some 36,000,000; early in this century it reached 95,000-000 miles; then it decreased to 91,500,000 miles; again it increased to 92,500,000, [most astronomers put it at 95,-000,000]; now it is estimated at 91,840,000 miles." No common language will describe the thrill which electrified Pyramid students when the extensive and expensive observations recently taken of the "transit of Venus,"—observed in every part of the world—gave the astoundingly parallel result of 91,840,000 miles. This is just 240 miles from the Pyramid estimate—with a parallax of 8.879 seconds of a degree? Then *Les Mondes*, of Paris, truly remarked, "The Great (*Grande*) Pyramid has conquered?"

Not only does the Pyramid give the sun's distance, but it gives very precise data regarding the earth's size, specific gravity, etc. The distance of the sun is obtained, as mentioned, by multiplying the vertical of the Pyramid by 10 raised to the 9th power. If this result, 91,840,270, be divided by twice the vertical of the Pyramid we get 7,899.56, which in miles is the exact diameter of the earth.

Another astronomical feature is that the perimeter of the Pyramid's base is equal to the circumference of a circle whose diameter is also *twice* the vertical of the Pyramid. The circle's circumference is 36524 inches.

9131, the number of inches on a side, multiplied, by four the number of sides, equals 36524, inches. Also, 5831, the number of inches in the vertical, multiplied by two to get the diameter of a circle, and then multiplied by 3.14159 to get the circumference, equals 36524.12534. (Fig. 75.)

The number is peculiar, for if the decimal be placed two points to the left it represents the number of days and fraction of a day required for one complete revolution of

the earth about the sun=a year. The fraction is not exact, but a correction of one-tenth of an inch in the base side, or the diameter of the circle, (one-tenth of an inch in about 10000 inches) would remedy the defect—and we are not that certain of the measurements given. The subject of days will come hereafter.

The above two problems show the importance, in Pyramid measurements, of the circle whose radius is equal to the height of the Pyramid. The diameter of this circle into the earth-sun distance equals the earth's diameter. The circumference equals the number of days in a year with the decimal point placed two degrees to the right.

Fig. 74. A, Pyramid. E, Equator. N, North pole. S, South pole.

Under the head of astronomical relations come many singular cosmical facts. For instance, the Pyramid is placed on a certain parallel of latitude, and being there, is, of itself, sufficient evidence that it was so placed by design. A line drawn through the Great Pyramid, around the earth, parallel to the Equator, will divide the land

surface of the globe into two equal sections. It will be that parallel which covers more land surface than any other line which can be drawn. However slight this circumstance may appear at first glance, under the light of the other mathematical relations, and a fragment of history which has descended to us, it becomes the most important fact ever chronicled in the history of science, and may lead yet to most important discoveries. It is folly to intimate that the ancients, in general, understood the size and shape of earth. The common people certainly did not. All written testimony, and all inscribed science, teaches the belief in flat surfaces, *or* imaginary supports for the earth. But farther still, how could they have known of the vast territory of Australia and Australasia? Or the great Continent of America? Yet not only does the Pyramid's exact location monumentalize the existence of continents, but it "weighs them in the balances" of some Almighty power—grander than instinct, more sublime than human intellect, more technical and intricate than coincidence or clairvoyance!

But some doubting one may suggest: "It was erected in Egypt; Ghizeh offered a suitable spot; it was coincidence—not that the Pyramid was built there,—but that the *Egyptians* were there!" True, if the Pyramid *were* built by the Egyptians, and were shorn of all these wonders except such as an ignorant but warlike people could have produced. But the *other* wonders *are* there, and this is with them; and no historian can consistently state, although he may deem it possible, that the Egyptians built it. A wonderful testimony is given by Josephus, a writer who had the most intimate acquaintance with the pre-Hebraic theosophic history of any ancient writer. He makes an untrimmed assertion that the God fearing

son's of Seth, seeing the knowledge which came to them from a divine source, dying out, built two monuments—one of brick and one of stone.* This stone monument was to contain the science of the universe. And of course, they built it at home where they could best labor and study—in Chaldea! Not so. For from some impulse—or guidance—or scientific knowledge, they went to that point on the earth's surface where it alone could unlock these mysteries of cosmos—to the "Siriad," or Egypt. Nor could they have selected a less likely location from a human standpoint—for at that time Chaldea and Palestine were the Garden of the world, while Egypt was an oasis, peopled by descendants of Ham, the banished one—a race cursed in the Bible by terrible prophecies which have been fulfilled to the very letter. Put this statement of Josephus by the side of the tradition of Melchizedek and Philitis, and the history of Herodotus, and then ask, Who built the Pyramid? A foreign, or a native race?

But to secure that parallel which divided the earth's land surface in halves was not the only object in building the monument in Egypt. As will be shown hereafter, the shape of the Pyramid gives us the quadrature of the circle. To do this required a certain shape and certain construction, and that construction produced a certain Azimuthal indication of latitude. That indication was for the 30th parallel—the only parallel on the globe where the geometrical and astronomical relations would harmonize!

*"They were the inventors of the peculiar sort of wisdom which is concerned with the heavenly bodies and their order. And as Adam predicted that the world was to be destroyed at one time by water, and another time by fire, they made two pillars, one of brick, and another of stone, so that if the brick pillar was [were] destroyed, the stone might remain and exhibit their discoveries to mankind. Now this stone pillar remains in the land of Siriad (Egypt) to this day."—(Josephus' Antiquities, Book 1, Sec. 2 and 3.)

We have not the space to work out this problem, but it indicates a God-like intelligence to have originally conceived it. The latitude of the Pyramid is now given as 29°56′6″, involving a possible error of 54″ in the 1,296,000″ in the earth's circumference—possibly due to our faulty instrumentation, or possibly an azimuthal change in polar axis during 5,000 years. It will be farther noticed that the Pyramid axis (Fig.74) is about 53° from the Plane of the Heavens. Now we know the earth to be spheroidal in shape. Hence, is not the circumferential difference from **S to C** less than C to A? Therefore, would 30° of latitude from the equatorial axis, on the earth's surface represent 55.5° from the Plane of the

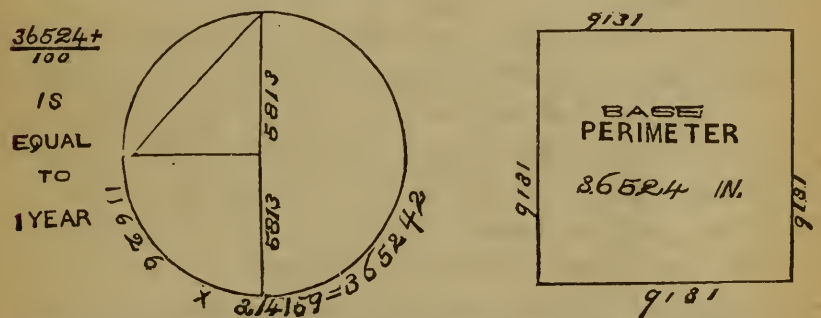


Fig. 75-6. Quadrature of the circle having the Pyramid-height for a radius, and the perimeter of the base, both equalling 100 years.

Heavens? We put the proposition plainly—that the 56″ of deviation of the Pyramid's latitude from 30° is neither an error of instrumentation, nor a change in polar axis, but represents the spheroidal shape of the *earth!*

The Great Pyramid gives an approximate measurement of the earth's size in two ways. (The word "approximate" signifies fallibility in our measurements). 1st, by *breadth:* A band around the earth, the breadth of the Pyramid base, contains 100,000,000,000 square feet. The diameter*of

*By a Pyramid *Pi* calculation.

such a band is 500,946,700 inches. 2nd, by height: The height of the Pyramid multiplied by 270,000, divided by 3.14159+ to get diameter, gives us very nearly even 500,000,000 inches, which is the polar diameter. The reason it is multiplied by 270,000 is that a circle equal to the area of the square base is 270,000 inches in circumference. It is plain that a mind who could provide for such vast mensuration understood the shape of the earth.

Our space will not permit following the astronomical and cosmical features farther; but the mine is scarcely opened; while if the key to the Great Monument were in our possession, these disconnected items would doubtless take proper and harmonious place in a complete and reasonable whole.

ORIENTATION.—The almost astronomically exact orientation of the Great Pyramid is indeed a remarkable feature. Without knowledge of the earth's shape, or motions, and an exact line from Alcyone to Draconis, the east-and-west and north-and-south direction of the sides could not have been accomplished.* It never did occur in other ancient buildings. Glidden remarks that this feature indicates that they were familiar with the compass, but it is known that there the needle points several degrees west of the direct north pole. The sun's rising would have been of no avail, for it varied from equinox to equinox. Altogether, the placing the structure east and west correctly is corroboration of the astronomical date of the Pyramid's erection.

The polar axis of the earth is generally accepted as 500,000,000 Pyramid inches. Twice the height of the Pyramid in inches (5813) equals 11626, or just 100 times the length of the ante-chamber. Now multiply the polar diameter by this, and reduce to miles, and we have 91,745,-

*Prof. Proctor to the contrary notwithstanding. Approximate orientation, as by the compass, and exact orientation, are not more at variance than are some of Prof. P.'s theories and the Pyramid facts.

580 miles—very nearly the distance of the sun, and agreeing with a strong report of a section of the observers of the recent transit of Venus.

THE METRICAL SYSTEM.

All of our readers are doubtless aware that the French Government seek the universal adoption of their metrical system for weights and measures. That is, that weights and measures should increase and decrease by a scale of 10, having the 1-ten-millionth part of the earth's polar quadrant for a standard. (Fig. 74.) This was called a "meter."

The principle involved in a decimal system is a good one, but the radical adoption of a system which would overturn the weights and measures of centuries would prove a national calamity. And still, were it necessary, to attain the actual benefits, to make a sacrifice, the world at large would undertake it. But the French system is based upon two remarkable and acknowledged errors—a theoretical, in taking for a standard a circle, which never has nor can be measured ; a practical blunder in measuring incorrectly the arc selected.

The great difficulty in fixing unalterable weights and measures is to secure an unvarying standard—one which the heat and cold of climate, electric conditions, and the interference of man can never modify. Standards preserved at the national capitals will shrink, corrode, or be modified by the changing current of politics. The .001 of an inch may make little difference in one foot, but might put a man's farm under the sea!

The French nation adopted as a standard the one ten-millionth of a quadrant of the earth's circumference on a meridian at Paris. This was a product of the "reign of reason," when a nude strumpet was set upon a throne as the intellectual deity—during the Revolution. The circle

is an incommensurable, the arc not much better. But this arc describes a section of a spheroid! The effort to establish a standard on any curved line was unscientific. This new standard—1 ten-millionth of the quadrant—was called a meter, and is 39.37079+ inches in length—that is, it is thus computed. It is too small, however, by 1-3500th. They also had the misfortune, in producing a cognate standard of density, to get spurious metal mixed with the cube, and untold calculations are incorrect. It was meet product for the age that brought it forth.

The Pyramid has a metric system sanctified by the ages, which can teach modern science much, and modern antiquarians more. It is thoroughly scientific, of Biblical authority, and what is of great importance, agrees with the almost universal Anglo-Saxon large and small standards. The word "Pyramid" is derived from "*Pyr*," division, and "*met*," ten, in the ancient language of Egypt, and of the Copts. The most remarkable defense that can be offered for its standard is that it is the *only correct* one possible to obtain—taken from the only straight line on or in the earth, one that is mathematically immoveable. This is the polar radius, or one-half the axis of revolution—the polar axis. The polar diameter is reckoned at 500,500,000 Anglo-Saxon (our own) inches, or 500,000,000 Pyramid inches. 1–500,000,000 of this calculation equals 1.001 of our inches, or 1 Pyr. inch. This very small difference is due to the loss the English inch has sustained in 4000 years. This "inch universal," or "thumb breadth," is the Pyramid standard linear, and under some title is used by races scattered over the whole earth. It is a part of the natural system embracing the thumb, palm and arm. The "sacred cubit" of the Jews was 25 inches in length, a "cubit and a hand-breadth."

This cubit, which often appears in the construction of

the Pyramid, is 1-ten-millionth of the earth's half axis of revolution,* or straight line used by the Pyramid to establish the inch. It is a cubit of most remarkably ancient history, being known as the measure "given by Jehovah to the Jews" to build all the sacred appurtenances of worship, including the temple and contents.

In the Pyramid it occurs prominently as follows: It is the measure of the top of the great niche in the Queen's Chamber, (p.106).† In order to ascertain the number of days in a year, the base line is divided by that number which is a factor with 365.242,—the cubit of 25 inches. The embossing on the granite portcullis in antechamber, is supposed to be a cubit divided by five, being five inches long. Its height, from granite leaf, is one-fifth of its breadth or just one-inch.

The length of the King's Chamber is 412.132 inches. Now 412.132 cubits is the diameter of a circle whose area equals the square base of the Pyramid, which is 365.242 cubits on a side; and, on the other hand, a square having 412.132 cubits on a side is of equal area to a circle whose radius is equal to the height of the Pyramid, 232.520 cubits. Does any one imagine that these relations, which can be greatly extended—correct to a fraction—could occur if this cubit were not involved in the construction?

It may be of note that not only is the sacred cubit employed, and the inch which has come down to us from a remote antiquity, but the coffer in the King's Chamber is of exactly the same cubical capacity as the "Ark of the Covenant," of the Hebrews. This Coffer is a most wonderful object. It is the *great standard*, of which the modern British *Quarter* measure is just one-fourth! English people who measure a *quarter* of wheat do not realize that their standard chauldron is in the Pyramid! Is

*See Fig. 74. From D to E is the French quadrant standard. From E to center is the Pyramid "half-axis of revolution.,'

†The .3 fraction is partially due to English in., and a m ean of variations.

there any *chance* in the construction of this coffer? Its internal space has precisely the same cubical volume as its solid sides and bottom; the length of its sides constitute the circumference of a circle, the diameter of which is its height; it is just "one-fiftieth" the size of the chamber in which it is enclosed! The identity in capacity with the Ark of the Covenant (Tabernacle and Temple) confirms the theory of the use of the "sacred" cubit. The cubits of Memphis, Palestine, Babylon, Greece, etc., were very different measures. No other building in Egypt has been built by the sacred standard. Dr. Seiss emphasizes

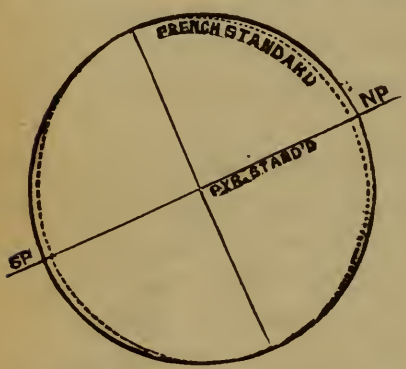


Fig. 77. Measure standards. N P, North Pole. S P, South Pole. Page 138.

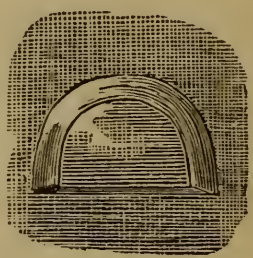


Fig. 78. Relief sculpture on the granite bar or portcullis in Antechamber.

the fact that Solomon's "molten sea," was 50 times the size of the ark, and hence just the size of the King's Chamber.

By these scattered evidences in the Pyramid, we know a certain system of linear measure has pervaded the social and commercial fabric since the human race originated. The inch has been referred back to the "thumb-breadth." Inches make a palm and palms a cubit. But even the cubit may now be discovered in this structure which antedates history. So modern measurement appears to have as

ancient an origin, the coffer agreeing precisely with the Anglo-Saxon quarter.

This ancient system being based on the only cosmical standard of value, the axis of the earth's rotation, why demoralize the commerce of the world to force upon the people a system whose linear is in error by computation, and whose metallic standard is in error by adulteration?

Still worse were such a policy when it is exceedingly unpractical to "jump" measures by multiples of 10. Inasfar as the decimal system can be fairly used the Pyramid system contains it. A decimal scale to be of use must break up into convenient fractions. Our money is only partially decimal. The half-dime, quarter-dollar, 3-cent-piece, quarter eagle, etc., illustrate this. The foot of 12 inches may be changed to 10. But the inch can never be taken away. And with the foot of 10 inches, what more natural division next than the quarter of a hundred, "25," —a cubit. Then 100 cubits now equal an "acre-side," or one side of a British acre. In weight measure the great scientific standard for mean specific gravity, is exactly the 1-2500th part of the cubical contents of the Coffer, and gives us a modern "pint"—a Pyramid pound, as it is "the world around." This pound divides evenly by 10 for grains, and increases by decimal multiples and four for chaldrons, tons, etc. Then if the national standard must be simplified, let it be by those slight changes which will conform it to that great natural and mathematical standard which was established before the dawn of history.

Before passing this topic, we add a few problems from a pamphlet just sent us by its Author, an accomplished Civil Engineer,* illustrating the relation of a cubit to the

*"The French Metric System," by Charles Latimer, Cleveland, Ohio. For sale by C. H. Jones & Co., 188 Monroe St., Chicago.

Pyramid: The total length of the Antechamber floor is 116.26 inches. It is the diameter of a circle whose circumference is 365 242, = to the days and fraction of a day in a year. Multiplied by a cubit it equals 9131 inches, the length of a base side of the Pyramid.

The 116.26 multiplied by 50, (a double cubit, and the course of masonry upon which it rests), = the vertical of the Pyramid, 5813. But 116.26 multiplied by 2, (the 50 being 2 cubits), = the vertical in cubits.

The granite floor of the Antechamber is 103.033 inches long. It goes into the breadth of the King's Chamber twice, exactly; into its length four times, and its height 2.236 times—which is the square root of 5. The sum of the squares of these numbers, (4, 16 and 5), is 25, the sacred cubit. Into the diagonal of the end of the King's Chamber this 103.033 will go 3 times; into the floor diagonal 4.472 times, into the side diagonal 4.582 times. The sum of the squares of these numbers is the double cubit.

The length of the King's Chamber, 412.132 inches, is the diameter, in cubits, of a circle whose area is equal to a square the size of the base of the Pyramid.

A square having 412.132 cubits for the length of a side is equal in area to a circle whose radius is equal to the Pyramid's height. Thus it is demonstrated that a known relation between the Chambers and the structure is by means of an x standard, and that $x=25$.

QUADRATURE OF THE CIRCLE.

The entire mathematical problem involved in the construction of the Great Pyramid is not yet evolved. The chronological analogies, and the astronomical features, are only disconnected wonders which indicate the presence of a precise and consistent plan upon which the whole structure was erected. Angulation, and mensura-

ation, section, the properties of the circle, square, triangle, ellipsis, and parabola; the cognate forms of sphere, cube, pyramid, spheroid, and cone, were apparently understood and manipulated by the designer. The astronomical elements may extend far beyond our present comprehension, as we only stand upon the threshold with a few of the plainer problems in hand.

It is among the most remarkable circumstances, that the first discovery of profound mathematical import in the Pyramid was the sudden interpretation of what is known as the π proposition,(Greek letter *Pi*). This is the substance of the Quadrature of the Circle, represented by the formula:

Diameter : Circumference : : 1 : 3.14159+or *Pi*.

The formula is the best means of finding the side of a square which is of nearly equal area to a circle. The *exact* operation which will reduce a circle to a square of equal area has never been found.

The Quadrature of the Circle, is one of the great problems associated with mathematics in all ages. It is not, as some have supposed, in recent Pyramid literature, the reduction of a circle to a square form of *equal perimeter*, but its reduction to a square of equal area. The circle is a polygon, with an infinite number of sides, and mathematics can never measure a curved line any nearer than to compute for a number of sides to any circle until they are so small that the error is unimportant. Hence, the relation of a circle to a square is the computation of the area of a polygon; but this polygon has an unlimited number of sides. The formula for computation may be (1) to multiply the square of the radius by the proportion of the diameter to the circumference, or (2) multiply the radius by the circumference for a rectangle, and the

square root of the half of it will give one side of a square of equal area to the circle. Both of these formulæ require the circumference, or proportion of circumference to the diameter. Therefore, the great difficulty in the way is to secure this proportion. And in mathematics it is always known as the *Pi* proposition or proportion.

Archimedes proved that the relation of the diameter to the circumference was nearly that of 1 to 3, using a polygon of 96 sides. Ludolph Von Ceulen computed a circle having 36,893,488,147,419,103,232 sides, and the fraction he secured thereby was:

Diameter : Circumference :: 1 : 3.14159265358979323 846264338327950288+.

The error in this computation is so small that in a circle whose radius is 250,000 times the distance of the earth from the sun, the correction would be less than the millionth of the width of a human hair.

Does the Pyramid represent this *Pi* proposition? It does. Do other Egyptian monuments represent it? No, not one. Could not this peculiar shape be coincidence? *Once* among a thousand million chances, but not a dozen times in one monument!

Fig. 79 represents the two prominent problems involved. The square ABCD is the base, 9131.05 on a side. E to F is the vertical height. The vertical is to twice the base side as 1 is to *Pi:*

5813 : 9131.05+2 :: 1 : 3.14159+.

This is a very singular fact, but not all—for the perimeter of the square base (9131) is also equal to the circumference of the circle having the height for a radius, and twice the height for a diameter. Thus:

9131.05 × 4 (No. sides)=36524.2 inches, or 100 years.
11626(diam.) × 3.14159=36524.2 " " "

"Who laid the corner stone upon it, when the morning stars SANG TOGETHER, and all the Sons of God shouted for joy?"

Job, Coptic Version.

AND A PILLAR IN THE BORDER THEREOF.

ISA. XIX.

Fig. 79.

Are not these numbers remarkable evolutions? Does not 36524.2 equal 100 years to an hour? There are 365.242 days in a year, and the decimal system with a moveable point, is used all through the Pyramid. Why, we hope to find hereafter. The diameter of the height-radius circle, (11626), bears the same relation to the Antechamber, which is 116.26 long. Thus the base, the vertical, and the Antechamber are part of a *Pi* proportion. Let us examine the King's Chamber. It is 412.132 inches long. The area of a circle of equal diameter, squared, gives the Pyramid's base. Again, the circuit of the side wall, (including all the granite, which dips below the floor for some reason) divided by its length,=*Pi*. There are many other illustrations. The number of cubic inches in the granite bar or portcullis, across the Antechamber, is *Pi* multiplied by 10,000. The Queen's Chamber is also full of this proportion. The exact outer end of the entrance passage is computed by a *Pi* proportion. Then the Coffer, the standard of measures for the world: Its height is to the side and end as 1 is to *Pi*. In fact, 3.14-159 seems to be impressed all over the structure. A circle with the breadth of the Coffer's base for its diameter, or a square with the depth of the coffer, = the area of a side divided by *Pi*.

Why is it that this ever present proportion of Quadrature is so intimately connected with the days, and the year, and centuries? Is it possible that the great mystery of eternity is thus symbolized in a circle, and geometrized to known properties? That the greatest circumference known to the earth—being infinitely incommensurable, like other circles—is thus crystalized in the lesser circles, and transformed to equal squares? The revolution around the sun can never be exactly measured, then can

a day? Is not this the secret of our faulty cycle, and does not the Pyramid, which embodies the Great Precessional Cycle of the Heavens, also concrete the infinitude of time into its mass, in these ever-recurring symbols of an infinite fraction? Even the precessional cycle is a circle—does the Pyramid really contain its true circumference? It is hoped that when the key is found to unlock the vast Mystery which lies shrouded in the sombre pile, the solution of Time's infinitude may appear—in the wonderful revelation of complete proportion, in the Universe of God. Nor do we believe the many laborious but unhappy souls who are figuring on the Quadrature of the Circle, Perpetual Motion, Trisection of the Triangle, etc., will ever enter their Aden until the Lethe of the Great Pyramid is bridged, and the "Stars shout for joy!"

DUPLICATION OF THE CUBE.

It appears that among the mathematical triumphs of the Pyramid is the fact that the largest cube which can be inscribed within it equals one-half its volume. This is a practical operation of a difficult problem, viz.: To produce a polygon which shall contain twice the volume of the largest inscriptible square.

The figures we present are only proximate, leaving much for future study. It will be noticed that we have to subtract the cavities and the truncated summit, and that even then the result is 34 inches "out." But in the massive body of the Pyramid 17 inches on a side is a small error. The larger variations in the angle of inclination have a duplicative tendency to correct the error.

Let A=the vertical, 5813 inches.
" B=the inclined height, 7393 inches.
" C=the length of a base side, 9131 inches.
" E=elevation of passages and chambers } 1,000,000
" F= " " truncation at summit } sq. in.

Then, on a triangle by section of Pyramid, let

$$\frac{(A \times C \div 2) - (E + F)}{2} = x = \text{1-2 the surface in sq. in.}$$

$\sqrt{x} = 3568$. And A—3568=2245, distance from the inscribed square to apex, on the vertical. Then

A : B :: 2245 : 2857 = to distance on incline from the apex to intersection of inscribed square.

$$\sqrt{2857^2 - 2245^2} = 1767 \times 2 = 3534 \text{ inches.}$$

The distance between the inclined sides at intersection of a square containing one-half the surface is therefore 3534 inches. But the side of the square is 3568 inches, being an excess of 17 inches on a side.

All studies of physics involve certain conditions to secure accuracy. Among these is an unalterable temperature. Absolute stability in regard to humidity, and positive rest are also required. Thus, mass attraction, or specific gravity, can only be obtained approximately from want of these conditions. Deep cellars and vaults have been constructed in which to experiment. Standards of measure have suffered from these causes, metal standards expanding and shrinking with the slightest variation in temperature. Micrometer scales detect it, and also delicate pyrometers. The difference of the one-thousandth of an inch in one yard may displace rivers and planets, in vast calculations.

Near the Pyramid centre, in the King's Chamber, the conditions for stability are fulfilled. The Coffer, an apparent standard of measure and gravity, is surrounded by an atmosphere that never varies in temperature or humidity. Its approaches are narrow, and long. 180 feet

of masonry protect it in the nearest approach to the surface. The Subterranean Chamber is as silent and changeless as the scientist can wish. Among the "coincidences" of the Pyramid is this provision for the preservation of the standards for future measures. The temperature is 68° Fahrenheit.

TIME DIVISIONS.

The precession of the equinoxes, the Great Cycle of time, 25,825.68 years in extent, is so prominently written in the Pyramid that no doubt of intention, on the part of the builder can be entertained. It furnishes very strong evidence that it was built at the beginning of the cycle, as marked in the passage, 2170 B.C.

In numerous problems the year and century are given. The perimeter of the base=a century, or 36524.2 days. These "coincidences" extend to hours, minutes and seconds. They indisputably associate the *Pi* proposition with Time, and demonstrate the Inch Standard. $5813 \times 2Pi$ (or *Pi* × twice the radius, which is the diameter,)= 36524.22 days, or 100 years. This number÷4=9131, the base side. It will be remembered, in this connection, that all evidence goes to show that the ancient Egyptians were ignorant of the true cycle at this time and a thousand centuries after.

These are Pyramid "Facts" which the modern mathematician and historian will do well to ponder over. It involves a mystery of infinite relations to man and cosmos.

The Grand Gallery is supposed by many to represent the subdivisions of the year. This wonderful hall seems devoted to Time, as it certainly is devoted to other than sepulchral objects, and hence the Pyramid student looks for peculiarities which can be referred to time divisions. With such examination it is said that the seven overlap-

ping stones, or tiers of masonry in the sides represent the weeks of seven days. Ten and five are the Pyramid numbers, seven rarely entering as a factor. However, the Grand Gallery is seven times as high as its entrance passage. That part of the horizontal passage in the "cut away" of the Grand Gallery floor, (Fig. 53, p. 87), is one-seventh the whole length of the horizontal passage. The enlarged south end of the horizontal passage is also one-seventh of the entire length. The Queen's Chamber has seven sides. Mr. Smyth refers all these circumstances, as symbols, to the week of seven days. We do not see any application except in the case, possibly, of the overlapping stones of the Grand Gallery. Still, it is difficult to see why the passage should be so low and narrow, and the Grand Gallery suddenly seven times higher without some symbolical import. Prof. Smyth likewise held the idea that the seven overlapping tiers on each side represented *two weeks* of months, or 14 months of 26 *days* to the year. And this he regarded as a more reasonable division than 12 months, as it leaves but one day to be added to 26 days at the end of the year, and two on leap years. At present we add five or six days to one-twelfth of 360, or 30, the even length of our months. Then to indicate the imperfections of the months there are 28 ramp holes on one side and 26 on the other; and the two last—at upper end of Grand Gallery, extend under the wall, as if referring the observer to the Antechamber. In the Antechamber we find on the sides four ridges; three curved, or hollowed, and one full and straight.

These are supposed to represent the three imperfect years, and the fourth perfect. Some other refinements are added to this theory. On the whole, while it may contain the germs of a great truth, the evidences lack

strength, and do not satisfy a demonstration by considerable.

THE STONE LOGOS.

The most remarkable development of the Great Pyramid is its relation to that religion which has descended to us through the Abrahamic race. Of course this relation is not susceptible of "proof," but is capable of a very general elaboration.

A just judgment of the value of the Biblical references and relations requires more than a passing knowledge of the language employed in the Bible. It must give not a little weight to the history of those races descended from Shem, but out of the Abrahamic succession; for, no doubt, the Caphtorim, the Canaanites in general, and the races under the mysterious Melchizedek, were part of the original monotheists. The peculiar history of the Pyramid's erection; its freedom from idolatrous hieroglyphs, present in every other tomb and temple in Egypt, and its marvelous problems—almost if not quite prophetic—also should be taken into account. Again, the *order* of the events related to each other, chronologically, deserve the careful consideration of the student:—The Flood, the settlement of Canaan and Egypt, the lives of the patriarchs, the origin of letters, the migration of Jacob's children and their Exodus,—the building, sealing and discovery of the Pyramid's interior—all make up a history in which there is a common theme and an identical theism. The prophetic nature of the chronology, contained in the passages, representing events in the history of the Hebrew race, is a strong indication of a theistic design on the part of the builder. The peculiar prominence of the "sacred cubit" is also worthy of notice, especially as this cubit (25 Pyramid inches) was not in use either by the Egyp-

tians or Hebrews as a people. It was given of God, as witnessed by Ezekiel (Chap. xl), and consisted of a "cubit and a hand breadth."* That this cubit is also the earth's semi-axis divided by 10^7 as represented by Herschel, is also a wonderful fact. The striking analogy in size and cubical contents between the King's Chamber and the "Holy of Holies" in the Temple, has been pointed out to us, but the analogy may not be direct and close enough to indicate an intention to duplicate the one in the other.

The probable size, (cubic contents), of the ark of the covenant presents a very striking analogy. The exterior of the ark, as given in the Bible, in inches, was 62.5 inches long, 37.5 wide, and 37.5 deep. Now allowing for the probable width of the sides and bottom and we have a mean of 71,247.5 cubic inches as the probable capacity, which corresponds with great exactness to the mean coffer capacity. It would also appear that four omers, or measures of fluid, equal one ark of dry measure, being thus parallel to the British quarter. Added to the many physical signs which point to a relation between the Pyramid and the theosophic history of the Hebrews, we find many references which point directly to this monument.

Many parts of the Book of Job are supposed to refer to it, but to our mind not distinctly enough, unless the relation of a divine builder be established by other evidences. The most direct and incontrovertable reference is in the 19th Chapter of Isaiah, 19-20th verses: "In that day shall there be an altar to the Lord in the *midst* of the Land of Egypt, and a pillar at the border thereof, to the Lord. And it shall be for a sign, and for a witness unto the Lord of Hosts in the Land of Egypt."

*The irregular cubit of the ancients varied—in the neighborhood of 20 inches.

It will be remembered, in reading this, that in Isaiah's time there was no admiration on the part of the Jews, for the land of Egypt—that each prophet in succession had poured out vials of bitter prophetic denunciation against the Nile Valley, all of which have been most wonderfully fulfilled. It will be well, also, to bear in mind, that that very portion of the Pyramid which represents the Jews shows them as a "cut off" from the ascending passage and enlarged Grand Gallery, plodding along painfully, in a narrow, rough, unfinished passage, whose very mortar was mixed with *salt*,(*vide* Jewish customs, and the salting of the earth at destruction of Jerusalem).

Is there any "pillar," or "altar," in Egypt to which this significant expression can refer? Egypt is free from monotheistic monuments other than this stalwart prophet of stone. Is there any interpretation to the words: "In that day," applicable to the Pyramid? Singularly enough this witness was sealed from the world for twenty-five centuries after Isaiah's time, and its mysteries are only now becoming dimly visible in the theistic and cosmic sense, in this dawn of that prophetic promise of millenial glories.

Admitting these peculiarities, is there any construction of the language employed which gives topographical evidence that the Great Pyramid was to be God's Witness? Prophecy sits upon the ruins of Babylon, Tyre, Edom and Egypt, and from the Euphratean marshes to the sands which carnival about Petrea's cliff-palaces—not a frown of the Almighty has been wasted. What, then, of this "witness?" A thousand years before Christ, Memphis stood nearer the seashore, and the Memphite pyramid was on the border of the encroaching sands. To-day there is a plain stretching out from ancient Egypt into the sea,

which harmonizes two antithetic phrases in Isaiah's prophecy: *In the midst of Egypt*, and yet *in the border thereof*.

The meaning of this was a mystery until cleared up by one of those Providences which come from indirect agencies. A United States naval officer, in passing the coast of Egypt, noticed that the shore line constituted an arc of a circle, the converging radii of which meet at the hill of Ghizeh. This idea did not originate in any desire to develop Pyramidology. A carefully prepared map illustrated the fact very strongly, an imitation of which appears on page 151.

At present, taking the geometrical shape of the valley as a guide, the Great Pyramid of Ghizeh is in the center of a circle, whose circumference bounds the extremity. At the same time it is upon the border thereof. Westward stretches the dreary waste of sand. Eastward the fertile valley. It is also on the border that separated Upper from Lower Egypt. No language could have been used by man so appropriately to mark its situation —nor could more foolish words be spoken than these, providing the Great Pyramid were not referred to. The Pyramid could have been built on the banks of the Nile, at less expense and without causeways.

The following extract from Job is doubtless the most direct of any that has been appropriated to the Pyramid —the Lord answering Job out of the whirlwind:

"Who is this that darkeneth counsel by words without knowledge? Gird up now thy loins, like a man, for I will demand of thee, and answer thou me, where wast thou when I laid the foundations of the earth? Declare if thou hast understanding. Who laid the measures thereof, if thou knowest? Or who hath stretched the line upon it? Whereupon are the foundations* made to

*If the sides of the Pyramid are continued through the earth at the same ratio of ten to nine, the intersection of the axis of revolution will be at the poles. See Appendix.

Fig. 80. Map with sector of a circle having the Pyramid as a centre.

sink. [As rendered by Dr. Seiss.] Or who laid the corner stone upon it, [Coptic], when the morning stars *sang together*, and all the Sons of God shouted for joy?"

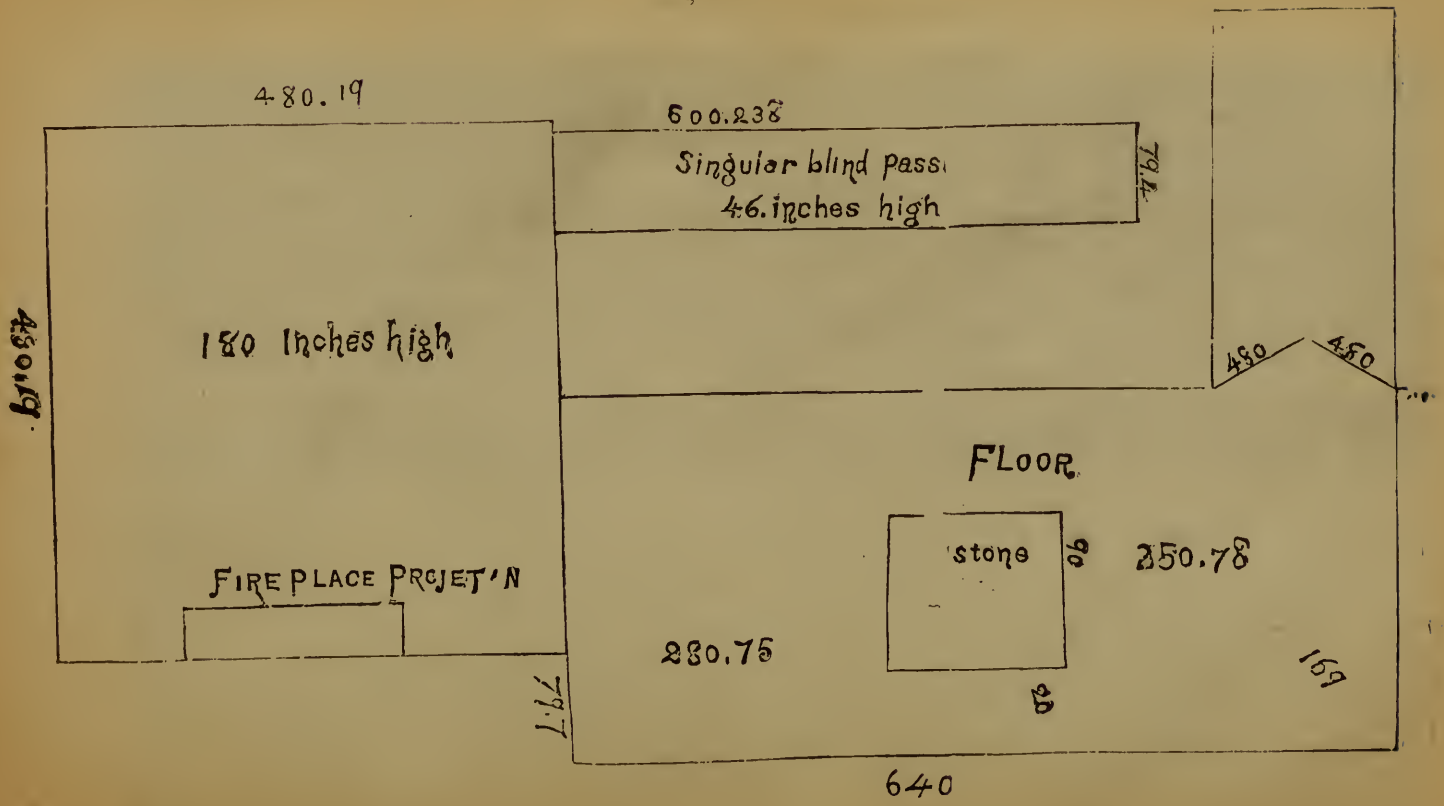
This is certainly a masterpiece of eloquence and power —yet so simple that a child can understand its majestic import. It will be noticed that the description of the foundations and the erection of a structure, are separate and precede the reference to a corner stone. One stone only is spoken of, and that, by Coptic rendering, *upon* the structure. The Coptic version was derived from the Septuagint, and at a period when the Pyramid was nothing that other pyramids were not,—in fact, "some idolater's tomb." Possibly this also refers to *a* Draconis and Alcyone, at the grand "morning" of the Great Cycle—the Pleiadic year! How could the poetic expression of the beginning of God's Universe-Year be more lofty and sublime than by the words "morning stars;" and the "corner-stone" thus becomes intelligible— especially by a farther study of the expression in other parts of the Bible.

The birth of Christ was signalled by a star, a "morning star," and throughout the written Word he is spoken of as a corner stone, even as a "chief-corner stone." So pertinent are these references, that the missing corner-stone of this "stone logos"—in the wilderness—seems to be a symbol of the Christ,—who was welcomed with the *songs of angels*, but who has since been crucified and removed from earth.

We would also advise our readers to peruse Zechariah, 4th chapter, keeping the imagery of the building, the headstone, the mountain, and the expression of a "base," well in mind. Especially note the expression—"he shall

Fig. 81. Pyramids as seen from Old Cairo.

Fig. 85.


480.19
600.238
Singular blind pass.
46. inches high
794
180 Inches high
480
480
FLOOR
stone
90
250.78
FIRE PLACE PROJET'N
280.75
169
779
640

bring forth the headstone thereof with shoutings. Grace, Grace unto it." It is possible, as witnessed by what has been said, that the Great Pyramid is the prophetic symbol of the Church, the Temple, and the Logos, the Capstone being Jesus Christ, who is slain, whose birth was with song, and whose future advent, together with the discovery of the missing corner stone will be with shouts and songs of joy by God's people.

David says: "The stone which the builders refused has become the headstone of the corner."* In parallel words it is said in Acts 4 : 11, "This is the stone which was set at naught by you builders, which has become the head of the corner." Read also 1st Peter, 2d chapter, from the 4th to the 8th verses, and note the distinctness of the expression of a "chief-corner stone." Especially the comparison of a Christian sect to a stone temple having a chief-corner stone in Christ Jesus, in Eph. 2:20-22. Follow this with the denunciations in Matthew 21:42-44.†

We must admit, after a careful consideration of this branch of Pyramid study, that the evidence of theistic teaching in the Pyramid analogous to the Hebraic theology, and referred to in the Hebrew writings, is more than enough to awaken the profoundest investigation of modern students. And yet, until the Pyramid presents more than fragmentary marvels, the connection with the great stream of theosophy must be seen as "through a glass darkly." That the unveiling of the marvellous structure will show that God's will, purpose, and agency is intertwined with its scientific attributes, we have no doubt. Such grand design, such depth of research, such intellectual grandeur, such harmony in execution, such wonder-

*The Septuaginta say—"the HEAD CORNER stone." We think there are philological reasons for compounding the two first words.

†Also read Jer. xxxii, 20:—"Which hast set signs and wonders in the Land of Egypt, even unto this day."

ful prescience were never united in the "living" rock, except God fashioned its "corner-stone."

UNITED STATES SEAL.

In the early days of the republic, when the founders of the nation worked out the essentials of a government, they established a "seal." On one side was the Eagle, with the scutcheons and emblems representing the thirteen states, and various allegorical points we have not room to work out. On the reverse was placed a Pyra-

Fig. 81. Reverse of U. S. Seal. There are different styles of this seal from the fact that it was never cut. The act simply specified an unfinished pyramid, with the addenda in the field.

mid, to represent strength, durability, and correctness of form. This was not a very singular choice, although the pyramids were then but slightly known. But the directions require an *unfinished* Pyramid. This was a little singular. Then they added to it a "Radiant Eye," significant of the Watchcare of God over our people. Inasmuch as a missing corner stone is now universally recognized as symbolic of Jesus Christ, this selection of the

Fig. 84. The Sphynx. This anything but ornamental monument of Egypt is not so large in proportion to the Pyramids as the cut represents. The deception of distance, however is great. A photograph of nearly the same field gives us a vastly smaller Sphynx. This engraving was copied from a lithograph.

complete design is still more singular. Very few are aware of the recently developed relations between prophecy and United States history. Its discovery, settlement by the Puritans, establishment of a seal, our coins, the "hope of the world" (Isis) character of our institutions, point with more than accidental likeness to the "new world."*

OUR COINS.

In English inches the King's Chamber is 412.5 long; breadth is 206.2 inches. The silver "dollar of our Fathers" weighs 412.5 grains, the half-dollar 206.2 grains, and the quarter-dollar 103.03 grains, "which last is an important Pyramid number." The dollar was the weight of an eastern coin of traditional age, current in Asiatic trade, and ours was made to correspond. The dates of this coin can probably be traced to the trans-Edomitic commerce.

The Pyramid height, in sacred cubits, is 232.5. The gold eagle weighs 232.2 grains, half eagle 116 grains.

The diameter of a circle is to the side of a square of equal area as 9 to 8 within an "incommensurable fraction."

Then the proportion

$$8 : 9 :: 103.132 : 116.+$$

shows not only that the weights of the quarter-dollar and half eagle are proportional, but exhibit a peculiar squaring-of-the-circle proportion. Any circle having 116.26

*In illustration: On the 9th of September, 1774, were passed the celebrated "Suffolk Resolutions," carried to Congress by Paul Revere—the recognized declaration of principles on which the new era and the nation began, with a free conscience, and God on its lips. Historians agree that the history of our country began at that time. At the same hour there arose over the sea, in the east, a "wonder" in heaven. It was the constellation Virgo,(Virgin), closely following the Sun, crowned with the 12 stars [there were originally only 12 colonies], the Corona Borealis, or "new constellation;" following Virgo arose the crescented moon. In connection read the 1st verse of the 12th of Rev.: "And there appeared a great wonder in heaven: a woman clothed with the sun, and the moon under her feet, and upon her head a crown of twelve stars." Other remarkable historical features add interest to the study. "The 'woman' fled into the wilderness . . on the wings of a great 'Eagle' "—See Bancroft's U. S.

for a diameter is equal in area to a square having 103.03 on a side. This latter number is accepted by all Pyramid students as the "measuring rod" of the Pyramid, being the length of the granite in Antechamber; at the same time 116.26 is the entire length of the Antechamber. Mark this well! If this coin came to us through the changeless numismatics of the east, whose standards are Semitic; and the channel of Indian commerce was through Edom, (a kingdom of the Esauite troglodytes, descendants of "Israel;") and they represent a quadrature proportion —where did they get these coins? But mark farther, this proportion is not 8 to 9—nor 16 to 18—nor the thousand other possible proportions! It is the very "odd" proportion of 116.+ to 103.03+. And in no place on this planet is it symbolized except in the Antechamber of the Great Pyramid of Egypt, whose cubit, arm, omer, coffer and King's chamber afterward appear in Hebrew mensuration. Again the diameter of a circle, (360°) in terms of seconds, is 412.5+, the weight of the said dollar. Therefore its circumference is 1,296,000—which is 1000 times 1269, the cubic inches in a yard. Thus we see the most remarkable fact that not only is the "dollar" decimal, historic, mathematical, etc., but it is decimally connected with the linear system of the ancients and moderns! And a fraction of these discoveries is not evolved. The time will soon come when the French scientist and the Anglo-Saxon philosopher will discover the practical Isis of the world's commerce unveiled in the "Pillar of Witness in the midst of Egypt."

NOTES.

The area of a right section of the Pyramid is to the base as 1 is to *Pi*.

The English gallon of 231 cubic inches is found mid-

way between the Pyramid height, in cubits, 232.5, and height of King's Chamber in inches, 230.89.—[Latimer].

The 35th tier of masonry possesses some curious properties. It is so much thicker than the tiers above and below, that attention is at once called to it. Its position gives the following measurements: From base to 35th tier, 1162.6 inches. This number is ten times the length of the Antechamber. From vertical center to the inclined side, or half the base of truncation, 3652.42 inches, or ten years, in inch years. The indication is that while the 50th course gives the cental enumeration, the 35th gives the decimal. It has not been sufficiently examined yet.

The Pyramid thermometric scale is decimal in its divisions:

0°	is	at	the freezing point of water.
50°	"	"	Earth's mean temperature.
250°	"	"	boiling point of water.
1000°	"	"	red heat of iron.
5000°	"	"	melting of platinum.

In Job 3:14, the word translated "desolate places," (*gorbah*) should read "lofty sepulchre, mastaba, or pyramid," (*perami*).

Eminent writers have asserted that correct zodiacs were painted on the walls of the most ancient temples. This is an error which has repeatedly been corrected. The zodiacs were painted under the Roman rule, after the correction of the Egyptian Cycle. (See Appendix, under the head "Caballah.")

The Pyramid not only furnishes the best known place for the pursuit of the study of physics, in its present ragged condition, but was quite absolute when covered with smooth, cold marble. The heat rays of the sun were reflected unabsorbed, and the desert air found no crevises for its scanty moisture.

It is said that the Pyramid is built upon that spot of earth whose meridian line and longitudinal section divide the habitable globe into *four* equal portions. Any person can take a map of the hemispheres and see how probable this is. It is a relation to ponder over.

The mean density of the earth is indicated by dividing the Coffer capacity, 71,970 inches, by the Coffer weight of water, 17,905.5 gallons, = to 5.672. The earth is one thousand billion times the weight of the perfect Pyramid.—(Petrie.)

The niche in the Queen's Chamber is about 185 in. high. $185.1 \times Pi \times 10 = 5813.+$. But that $182.62 \times 10 \div 2$ will = 9131, the base side, (Bonwick) is an error. $182.62 \times 100 \div 2 = 9131$. $182.62 \times 2 = 365.24$, the days in a year. It is difficult to ascertain the true height of the niche.

$9131 \div 365.24$ = the 1–10,000,000th part of the earth's polar radius.

The Great Pyramid may have been an altar, with a platform at the top for sacrifice. There is not, however, a single feature of the building, or note in its meagre history, which points to this conclusion. The inference is brought all the way from Mexico and Peru, where large mounds were so used.

As we have suggested before, it may have been a tomb.

Whatever may be our belief in this connection, its remarkable history and grand details of scientific and religious import are not modified thereby. The fact of the 50 or 60 other pyramids being tombs is of no value as evidence. The Great Pyramid was sealed, and at least the imitators of the first four—an ignorant host who worshipped their domestic animals, and dreamed of none of the great secrets within the larger—followed the supposed purpose of the majestic pile before them.

And yet we know not but that one of the chambers contained a mummy.

The evidence is almost a demonstration that the Egyptians did not build it. Strangers "conquered the country without a battle." They were the Semites who sought the 30th parallel in ancient and powerful Egypt.

On the sarcophagus lid, in the Third Pyramid, was an invocation to Osiris. This fact has been evidence to the Egyptologists that at least the Third Pyramid was constructed by the devotees of the polytheism of the native race. It appears to be so, but a critical analysis of the fact removes such a conclusion. All theosophists agree that at an early time the Egyptian *God* was one, supreme, omniscient ruler, without the semi-mortal attendants and accidents. These were introduced, probably, by the multiplying priesthood. The hieroglyphic ideations which naturally represented supreme intelligence and power were the THRONE and the EYE. And these forms are the name of the earliest deity the world ever knew—a name which gave *Os*, (a throne, because of stone, and later, an oracle because edict, law, and power issued therefrom,—still later, a "mouth") and *Iris* (an eye) to all the prominent languages of the world—even to our own. The subject belongs to a future work.

Its theism—distinct from the idolatry of Egypt, and emanating from a foreign race, hateful to the Egyptians—points directly to what afterwards became Hebraic; but at that early epoch was doubtless the great monotheistic belief of the Noachian family. Our conclusion, if it be worthy of attention, is that the Great Pyramid has a destiny intimately connected with future science; in the past, a prophecy of changes to come, and in all ages to be a "pillar" and a "witness" to the Lord.

SECOND AND THIRD PYRAMIDS.

In the consideration of these two smaller and subsequent structures we have been compelled to admit that they are "component parts of one great system." Not alone from the mathematical relations exhibited, as developed by others, but by the conclusion that the Shepherd invaders of Egypt, of Semitic origin, who built the Great Pyramid, remained in power for 500 years and constructed the entire system on the Hill of Ghizeh. There is no fact better established, amid the general uncertainty, than that the kin-successors of Cheops erected the Second and Third Pyramids, viz.: Kephren and Mykere.

We have already suggested that they were children of the same impulse, and to be distinguished from the 80 or 90 other pyramidal structures in the Nile Valley. While we believe that the Second and Third enter into the plan and figurative expression of the whole, still, in a strict sense, they were doubtless imitative to a certain degree. The lofty intellect that sought the 30th parallel, conquered the Egyptians "without a battle," and "destroyed the Gods," secured their grand object in the erection of the Great Pyramid. Knowing the design and mission thereof, the successors sought to add tomb-monuments which would enlarge upon the physical sciences shrined in the first.

One writer says: "The Egyptians were a supremely geometrical people," regardless of beauty or utility. Yes, with the "Hamlet of the play, left out." The wander-

ing Pelasgians, Semitic invaders, Cuthites—whoever they were—were a "supremely geometrical people." Karnak and Luxor and ruind Cyclopia antedate history too far to attribute much wisdom to the race who succeeded to their possession, and acquired the astronomy of the Ishmaelites. Mr. Agnew states that the causeway was also connected with the original design, and possibly linked the three Pyramids, mathematically, closely together.*

Mr. John J. Wild "contends that the Second and Third Pyramids exhibit the law of the retrogradation of the ascendant node of the equator in the ecliptic." "The eighteen years lunar period is obtained by the relation of the Gizeh Pyramids."

Mr. Wild shows that the elevation of the bases of the three Pyramids is at such degrees as equals the proportion between the radius and sinus of 14° 41′ 37+=33′ 2″ to 8′ 5″. And this equals "the proportion between the radius and sinus of the double of the central angle of a polygon which has as many sides as the square of the base of the Second Pyramid contains square seconds, viz., 49."

The minor mathematical relations thus worked out by the second and third Pyramids are quite numerous, though they nearly all require some element in the Great Pyramid to complete. Thus it becomes possible that the Cheopian dynasty—(two brothers especially—Suphis and SenSuphis) designed the Great, and the lesser were added as mathematical satellites.

The former height of the Second Pyramid was 454 feet 3 inches; present height about 447 feet, 6 inches. Base

*This causeway "was in length equal to the circumference of the chief circle, or parent of the whole scheme, that of which the First Pyramid was radius, [See Figs. 66 F, 69, and 79.] and of which the square of the base of the Second Pyramid was the inscriptible square."

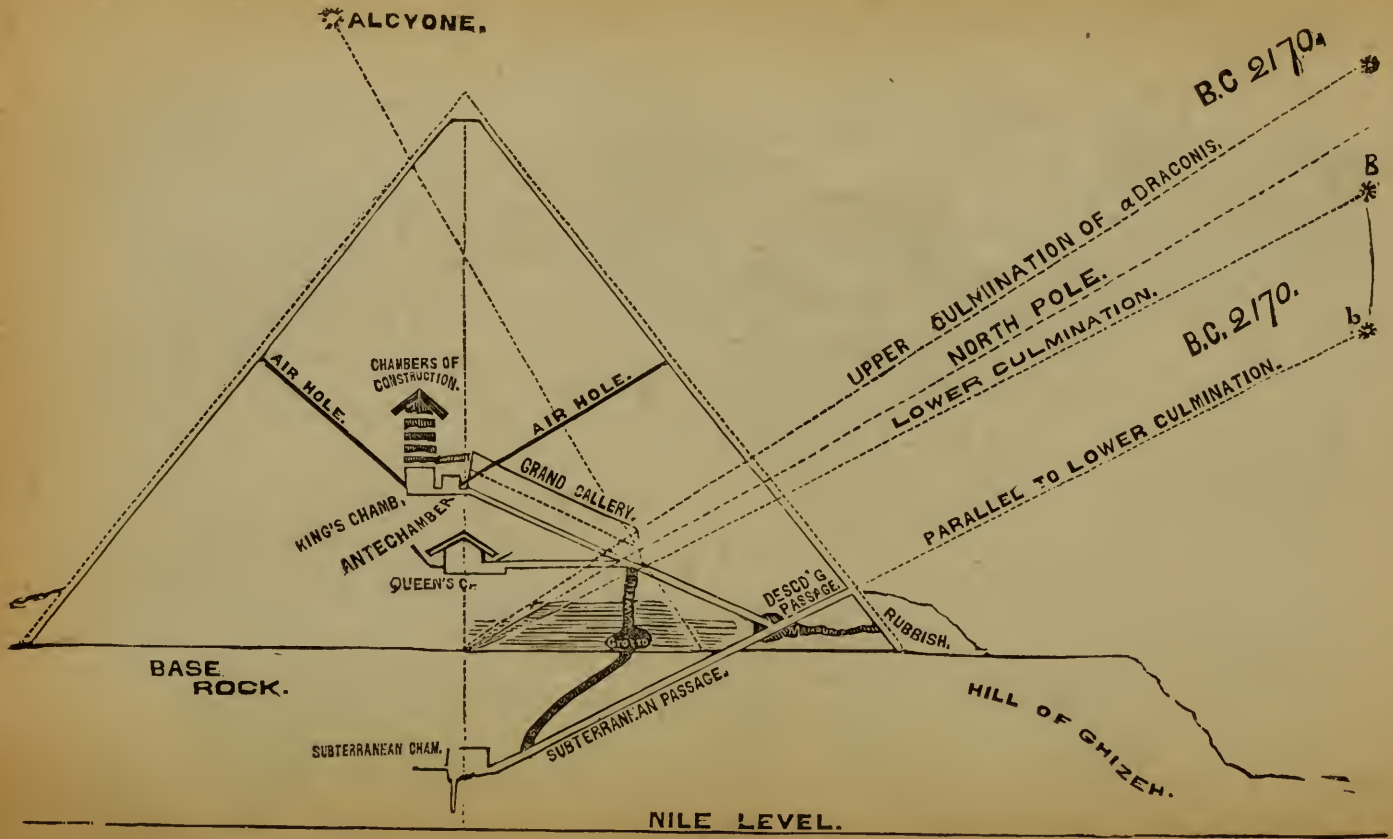

ALCYONE.
B.C. 2170.
B
b
B.C. 2170.
UPPER CULMINATION OF α DRACONIS.
NORTH POLE.
LOWER CULMINATION.
PARALLEL TO LOWER CULMINATION.
AIR HOLE.
CHAMBERS OF CONSTRUCTION.
AIR HOLE.
GRAND GALLERY.
KING'S CHAMB.
ANTECHAMBER.
QUEEN'S C.
DESCD'G PASSAGE.
RUBBISH.
BASE ROCK.
HILL OF GHIZEH.
SUBTERRANEAN CHAM.
SUBTERRANEAN PASSAGE.
NILE LEVEL.

Fig. 87

side, ancient, 707 feet 9 inches. (Perring.) These dimensions are not as accurate as is desirable.

Belzoni, the Italian traveller discovered the first granite stone disguising the entrance to the Second Pyramid, on the 28th of February, 1816, and on the 2d of March discovered the entrance. He found a narrow passage similar to that of the First, which descended toward the center for 104 feet, 5 inches, at an angle of 26°. There it was "portcullised." But Belzoni was a persevering antiquarian. *He raised the large portcullis*, and passed 22 feet 6 inches farther in. Then he dropped down a shaft, by means of a rope, 15 feet. Thence at an angle of 25° northward and downward, then an ascent which brought him to a horizontal passage. On the walls of the passage were multitudes of "arborizations" of "nitre," some in ropes, others resembling an endive leaf, and the fleece of a lamb. Lastly a "door" leading into the central chamber. Here he found a sarcophagus, 8 feet long, 42 inches wide, 27 inches deep.

He removed the lid. There, amid earth and stones, were bones which in London were afterwards declared to be those of a bull!!—the God Apis himself! This does not look as though this Pyramid were monotheistic—but fortunately for our faith, the inscriptions on the walls—of which there were many—were Coptic, Arabic, and Saracen. One of them read: "The Master Mohammed Ahmed, lapicide, has opened them, and the Master Othman attended this; and the King, Alij Mohammed, at first to the closing up."*

The bones of the Bull, and the earth and stones, were doubtless carried there when the bones of the first occu-

*This has been translated differently, the word "Master" not being given. Still the variations are not essential.

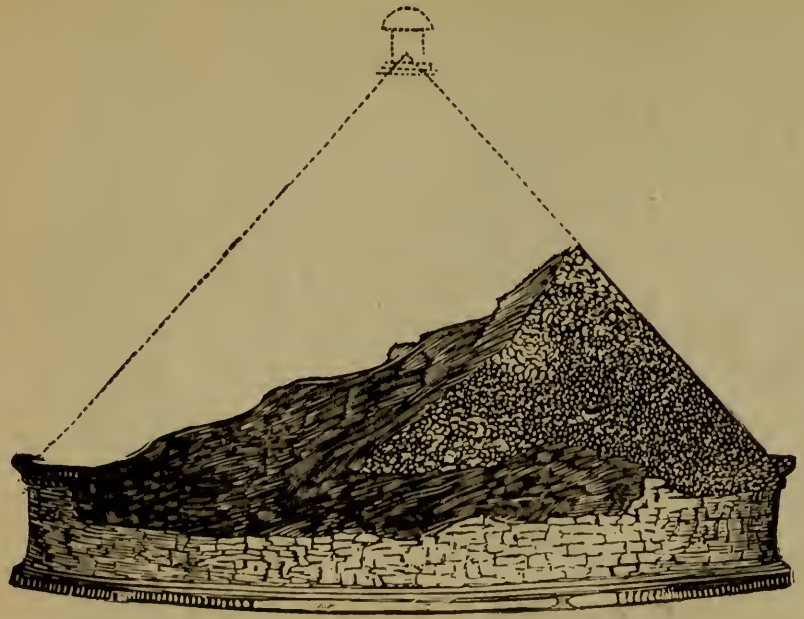
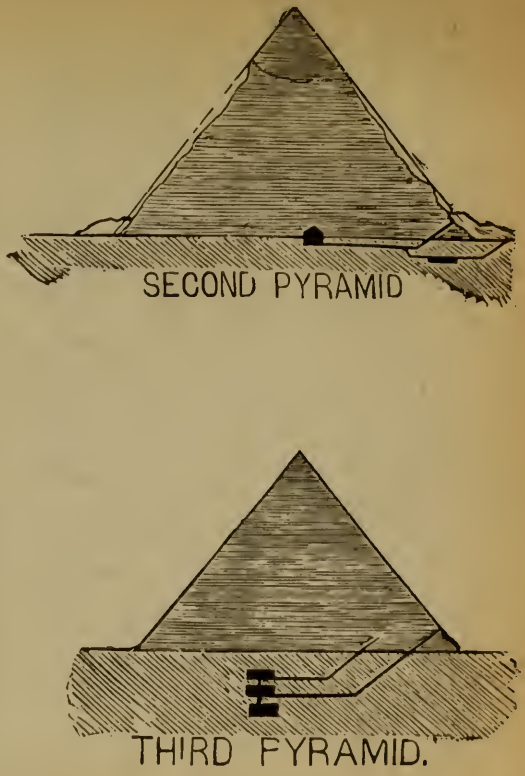


Fig. 88. Tumulus at Tantalais, near Smyrna ,11th or 12th cent. B.C.



Figs. 89 and 90.

pant were removed. Bones of the Apisite deities were not rare in that section! Diodorus says the priests disturbed Mycerinus' burial intentions, on account of their hatred of him. They possibly put a bull in this coffer—or "near it," as one writer says. Other passages were found, and other unknown inscriptions. Also another portcullis, which had been forcibly removed—leading to a probable second outlet.

It is said that a Cufic* or Cuthite inscription was once discovered near the top.

The ancient height of the Third Pyramid was 261 feet, present height 203 feet. Length of base side, 354 feet, 6 inches.

The Third Pyramid is comparatively perfect. The casing remains—the lower half of granite, and the upper of marble. The apocryphal statement that Nitocris was buried within is scarcely worthy of notice. It was doubtless built by Menkeres, or Mycerinus. It is called the Red Pyramid. Col. Vyse forced an entrance in 1837. Angle of passage 26°.+. Length of passage 104 feet Entrance, as usual, hidden and portcullised, also filled with loose stones. An anteroom, 12 by 10 1-2 feet and 7 feet high, preceded and was built over a large chamber, 46 feet 3 inches long, 12 feet 7 inches wide, and 13 feet in height. Beneath was a burial room, considerably smaller, having what appears to be, and has been described as an *arch*, built nearly a thousand years before it appeared in Egyptian architecture. The chamber really has a ridge roof of massive rocks, considerably hollowed or rounded out on the under side.

The room had been forced before Col. Vyse entered.

*Cufic characters are among the most ancient known, among a people who were the earliest to write, and whose science pervaded early Egypt —the Arabians.

The coffer weighing three tons was shipped to London, but was lost at sea. The "mummy board" is in the British Museum. On it is a prayer to Osiris. It is referred to on page 162.

The pyramids of Sakkara are but a short distance south of the Ghizeh group. One of them was a large structure, but the majority are much inferior in size. They are all badly ruined, and this has been taken as evidence of a greater age. But examination proves them to have

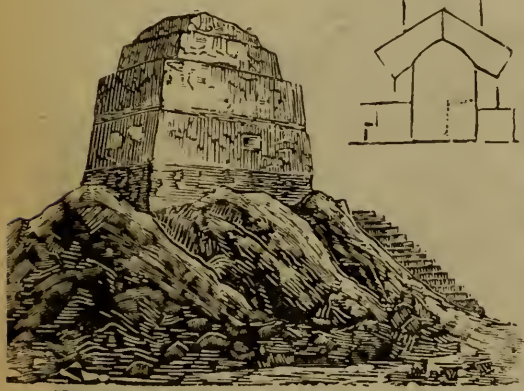


Fig. 91. Mastaba at Meydoum.

Fig. 92. The ridge-roof arch.

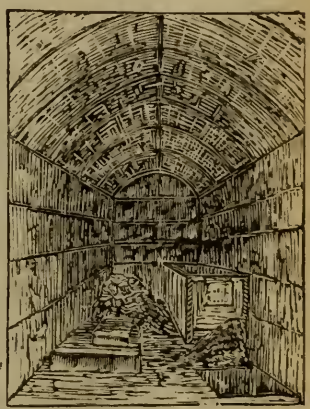


Fig. 93. Burial chamber in the Third Pyramid.

been very poorly constructed, some of them being built of brick. There is no evidence of other purpose than to place a huge, rough mound over a mummy-chamber, and their history marks the decadence of pyramid-building. They were followed by the obelisk, the collossus, (like the Sphynx, Memnon, etc.), stelæ, and temple tomb.

The extent of our work will not permit of a more extended description of these ruins, though extremely interesting from an antiquarian standpoint.

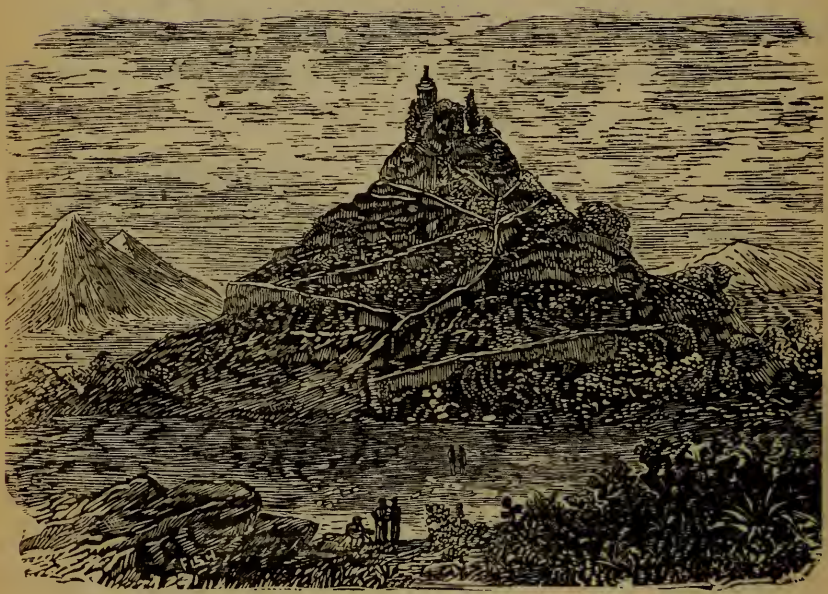


Fig. 94. Teocallis of Cholula.

APPENDIX.

EGYPTIAN CABALLISM.

As indicated in the preceding pages there were "books," in the ancient days of Egypt. How far back they were written is a matter of great doubt. Even those which remain to the present time, in fragments, give no clue as to authorship. It is said, traditionally, that relatives of Menes wrote works upon medicine and the arts. These statements will not bear scrutiny in the least. Menes himself is an imaginary personage—the name may, possibly, be an attribute of the common head of the Euphratean races, 3000 to 3500 B.C., from which Minos, Menu, and Manes sprang, and possibly it may be the signification of death and chaos. We believe in looking at the mythological status practically, and not building probabilities on possibilities. Now, so far as the facts will warrant, there are no books that extend back to the time of the Pyramids of Ghizeh. Still, the Acthoite (see p. 43) MS may have originated during the reign of the Shepherd invaders. However, they are not Egyptian, but from a race cursed by Egyptian priests. The history of the books is parallel to the history of the invasion; and according to Manetho they appeared during the 6th dynasty (Memphian)—the dynasty of his Suphis.

Our private opinion, formed from slight acquaintance with Egyptian literature—and from an examination of a portion of the "Egyptian Book of the Dead" in our pos-

session, is that these writings originated in Edom! And also that the science accredited to the Egyptian race is thoroughly Arabic and Petræan, and hence—from the Shemitic source direct. It is utterly impossible for us to rest on Prof. Owen's long epoch of time preceding a mythical Menes, when he stands isolated from *all* the historical facts, and in unison only with the traditions to which we shall soon refer.

The works of "Hermes" are often referred to. In fact a wide system of speculative historical and theistic philosophy has sprung up, known as Hermetics. It looks like jumping to a conclusion, but fidelity to the great duty of giving unbiassed deductions forces us to say that we believe there never was a "Hermes." The name was given, in a date subsequent to Moses (1300 B.C.), to a philosopher named Trismegistus. But long anterior to the period of T., his philosophy was evolved and his title (Hermes) enrolled in Greek theotechny as Mercury. What is known of Hermetic writings falls wonderfully below the standard of Edomitic philosophy. In fact the title "Hermes" was adjective.

But there is another phase to the development of Hermetics, more baneful to the general reader. Writers in the latest present may issue mammoth works, with cumbrous historical sophism, all requiring assumed conditions based upon a shadow, thus inoculating a numerous sect with error. Such statements as that of Baldwin's (See p. 49.) will furnish several volumes on Rosicrucian mysteries. But the most painful instance of this character is in the two large volumes of Madame Blavatsky's, entitled "*Isis Unveiled*," an exceedingly ponderous work.

In the first pages is given as a settled fact, a statement which is really necessary for the span of her philosophy.

All of 30,000 years are taken for the evolution of Egyptian, Iranian and Mongol civilizations. No words can express the pain with which the historian passes such premises to weighty conclusions.

The fact is, that no history of any race carries us back of 3500 years B.C., excepting the Bible.* Manetho is quoted. But nearly 30,000 years of Manetho's chronology is taken up by "Gods and Heroes," and the reign of the 30 dynasties extends only 5000 years. But Manetho lived in the 3d century only before Christ, when the Jewish historical and prophetic literature had totally ceased; when Edom and Phœnicia were forgotten; when Egypt glowered upon a past ten centuries old, and whose priesthood lived on the fabulous—when mythology was dominant. And with all this, Manetho's works live only in fragments copied into the pages of Mythological historians. Worse than this, Manetho made so many errors in the dates now known by the monuments, that his statements are utterly untrustworthy.

As to the Babylonian epochs, Berosus alone is a bare shadow of an authority for an extra-remote antiquity. And of his 36,000 years the *first* dynasty "of Gods and Heroes" require 34,080!! Still there is not a *shadow* even, of authority or genealogy for any of this mythism!

As for Iranian history, the verdict of Prof. Max Muller is of more weight than ours. He embraces the Vedic chronology under four heads, (the Chandas, Mantra, Brahmana and Sutra periods,) beginning only 1200 B.C. and closing 200 B.C. Thus the beginning of this Sanskrit

*And there is no Bible Chronology antecedent to 2000 B.C. The Septuagint giving such different epochs from the Jewish, (4th century, from which the Vulgate and our version are derived)—the singular paucity of the original alphabet and loss of Patriarchal MSS—throws the chronology of the Bible antecedent to Abraham in great doubt. On the whole the Septuagint version is worthy of more credence than the Jewish of the 4th century.

antiquity was quite parallel to the world-wide renown of Solomon, and was unborn in the time of Moses.

As for Chinese antiquity we may safely defy any evidence of tribal relations even preceding 2200 B.C.—at which time the universal Menu had been dead a thousand years—and the flood was a tradition of 10 centuries (Septuagint date). But to add to the confusion of the Caballists, the work on "The reign of the four Kings," by Laoutze, the Preceptor of Confutze or Confucius, contains a poem describing the triune qualities of the Deity, each of the three qualities beginning with foreign *Jewish* syllables, "Yeh"—"Heh"—"Weh"—our Jehovah!

The fact that flake-flint implements are found among the iron-wrought tombs of Egypt may also tend to shake confidence in the elaborate Stone-age hypotheses. But it is a subject which will receive attention in another work.

The history of the Isis of Egypt is remarkable in classical technics, and in theosophy—not from any evolution of an ancient caballism it may have in-volved, but because the breaking up of language brought Isis (eesis), out of Jesus (Yesus) and Esha (Eve, woman), the mother "whose seed should crush the serpent." It is probable that the research and apparently misdirected energy of the author of *Isis Unveiled* will assist in the future development of that theistic doctrine which it was its purpose to weaken.

There are a variety of theories regarding the evolution of Cosmos, which get their inspiration from the ancient works of Egypt, the most remakable of which is that all nature is a geometrical arcana. That morphology and history can be marked out with compass and pencil, and that the Great Pyramid is the Caballah to the scheme.

MASTABÆ.

It is the opinion of many antiquarians that the typical form of tomb which gave rise to the pyramidal system was the Mastaba, or Cyclopean elevations of rock, like that at Meydoum, (see cut). The mastaba is referred to an epoch from 2500 to 3500 B.C., dates which include the apocryphal dynasties of Egypt and the demi-Gods of Assyria. All that can be said is that there are no mounds in existence which furnish the slightest evidence of such an age—either hieroglyphic, monumental or technically historic—any more than there was of the Great Pyramid before science unravelled its astronomical data, and research discovered its hidden paint-marks in the interior. The Mastaba has been a type of tomb only as it represents a burial instinct in humanity, against which cremation is an education.

Had the drift and alluvium covered the rock substrat in Egypt as it did in Illinois, the Mastaba would have been a mound; had the American basin been covered with rock and sand, the tumulus and mound would have been rock-tombs, as in Central America. In the sense that teocalli, tumuli, mastabæ, stelæ and pyramids cover the dead, they are alike; but they are too often contemporaneous to be developmentary types of each other.

They represent the universal desire to place a headstone over the dead.

TEOCALLI.

The Mexican pyramidal structures are attributed to the Aztecs, the supersedents of the powerful and civilized Tezcucans. Those in Peru are less distinctive in character, and less numerous than in Central America. They are not, at present, imposing structures, with the excep-

tion of that in Cholula dedicated to the "God of the Air," Quetzalcoatl. These mounds or high altars were in the later years of the conquering Aztecs, used for sacrifice of human victims in religious rites. The mystery of their original purpose is a sealed book. They are "pyramidal" it may be supposed, because the shape of mound is the most natural for elevation. Sometimes the "temple" was within the mound—sometimes upon the summit—occasionally both. They were known by the name of "Teocalli." That of Cholula was truly a magnificent monument, though in no respect resembling the Egyptian Pyramid, either in "size, construction, or apparent purpose." Torquemada estimates their number as at least 40,000 in the ancient Mexican realm. A great many of them were circular mounds, and quite all were of a more or less terraced form. The Mexicans were peculiarly a fire reverencing people, though not strictly fire-worshippers.

The Teocallis of Cholula is built of adobe, stone, earth and cement—of four sides irregularly facing the cardinal points—terraced in a broken manner, and surmounted by a temple on a platform about one acre in extent. It is 160 feet in height, and about 1,400 feet on a side, by irregular measurement, thus covering quite 45 acres. It is rather a succession of mounds, apparently built around a natural hill. The present temple is a Spanish structure, but burial places exist in the sides, much the same as have been found in the sides of other mounts and rocks throughout the kingdom, as well as throughout the ancient Hellic and Etrurian necropoli, and among the Jain and Buddhist relics of India, or the rock cut caves of Upper Egypt. Fig. 94 is not correct—too lofty for base.

There are traditions that connect Quetzalcotl, to whom the Cholula Teocalli was erected, with Noah.

As a curiosity we would offer the following regarding the Mexican races. One of the earliest were the Maya, who had a peculiar hieroglyphic literature. There has also recently been sent us for translation the photograph of a very singular head-stone to an Indian mummy unearthed in southeastern Ohio. It remained long without any clue as to the nature of the hieroglyphs. The first feature noticed was a triangular triple character, a very close resemblance to the entrance hieroglyph on the Pyramid. We have since determined that the origin of the characters is the same as that of the Maya literature; and in view of the recent discoveries among the descendants of the ancient migrators, in Peru, of numerous Semitic roots in the older dialects, the student can arrive at some startling conclusions.

OUR CRITICS.

In general, the Reviewers have been very kind to the first edition, for it was exceedingly full of typographical flaws. The great mind-universal seems not unwilling to soberly investigate the Pyramid facts, as an antiquarian problem, and let it stand or fall thereby.

After a weary march in a tangled wilderness, we confess (as an Appendix allows of considerable familiarity with the reader), that recognition, even bordering on flattery, is tainted with sweetness.

But we call attention to another review, which would not be noticed were we not anxious lest the sheet should reach our English friends, who naturally know but little of the city in which the journal is printed. Chicago is a place of great prominence, half a million population, and much promise, it citizens being far better informed than its *Tribune*. It is the only journal in the city of unlimited "capacity." Chicago is not a pioneer city, nor warped by wildwood ignorance nor Indian complacency. Its newspapers are the largest in the world; its schools of excellent character. We mention these items because the interesting excerpts are from the Chicago *Tribune*, an immense sheet, of considerable influence.

The following verbatim propositions constitute nearly the entire review. For astounding intellectual calisthenics it excels everything. We commend its perusal to our journalistic friends "who laugh."

The study of the Pyramids has effected important discoveries. The Great Pyramid stands at the Apex of the Delta of the Hill [What is that? —F.], in the centre of the habitable globe, etc. This curious fact is not mentioned in Mr. Fish's work.

The Great Pyramid does not stand at the "apex of the Delta (of the hill!)" It is not in a delta of any kind, but on a slope of the Libyan chain. We occupied fully three pages on this interesting topic, excluding the *Tribune's* blunders. (Pages 128, 129, 130, and five distinct references elsewhere.)

2 And, as to the mathematical feature to which Dr. Fish gives so much space—the quadrature of the circle—but little benefit has ever been derived from the time and labor bestowed upon this problem. In fact the French Academy of Science and the Royal Society of London decided long ago not to examine any paper pertaining to this subject.

In which the reviewer's ignorance would arouse the jealousy of an Afghan. Both societies have recently discussed both the Pyramid and the *Pi* proportion. The Book gives not one word regarding the theories of circle quadrature, but remarks sympathetically of "the laborious but unhappy souls who are figuring on the quadrature of the circle, etc." The *Pi* proportions of the Pyramid, over 50 in number, received "so much" as two pages, and he is yet unborn who can write a work on the Pyramid and leave 3.14159+ out of it. We are afraid this genius does not apprehend the Binomial Theorem.

3. Nor does he allude to the existence of numerous pyramids in other portions of the world,

For the significant reason that we know of none. If the genius will exercise a cosmopolitan spirit and mention a few, his contribution to science will be warmly received. Truncated pentagons mounted in recession are not pyramids. Hence, Xochicalco may resemble Suku, but not Ghizeh. There are a few modern copies in Italy.

—and particularly those in Mexico, so like the Egyptian in SIZE, FORM, and APPARENT PURPOSE.

This is "unconscious cerebration." The loftiest teocallis in Mexico is 60 feet lower than the ordinary wooden

spire across from our window. Three such teocalli upon one another would look up to see Ægypta's ancient summit. They are of different form, not being pyramids. Their "apparent" purpose is well enough understood to have been for human sacrifice. Even as late as the fifteenth century the horrible smell of human flesh spread far around them. The sides of *the* pyramids were smooth. There were no means of ascent.

4. Dr. Fish has never visited the Pyramids. His theories and conclusions are merely based on examination of the opinions of others.

It is very confidently said. Let him think so. But as we have no theories to defend, it matters little. Dr. Seiss wrote an able work on the subject, yet all his data is from others. Dr. John Taylor surprised the world with Pyramid wonders, never having seen it. The great Pyramid *savant*, Prof. Smyth, wrote the "INHERITANCE" before his remarkable visit to the "pillar of witness." Mr. Bonwick disclaims any personal work. The last place on the face of the globe to study pyramid science, with less than a national treasury, is at the hill of Ghizeh, and we have yet to know of any pyramid science evolved by a tourist, *sui generis*.

5. Prof. Smyth holds that the design, origin and destiny of the Great Pyramid are theistic,

Be moderate—our work is copyrighted.

—that it never was intended for a royal tomb, but was rather an astronomical depository or workshop.

To labor with the hands, and to burn the torch until it singes the grey beard of morning; to bend under the burden of five solid volumes, to weary in a labor of love and sacrifice—is nothing. But after wrestling with a mighty past, and a present pregnant with destiny, to be thus thrown by a mountebank, and into an "astronomical workshop!" Professor, you have written in vain—unless this reviewer have a ganglionic weakness. We had supposed your life-work was to prove the Pyramid *not* an astronomical workshop!

6. Dr. Grant agrees with Prof. Smyth in his belief that the sarcophagus was not a coffin, because it had no cover. Henry Field—a personal observer—asserts it as a singular fact that the sarcophagus had no cover. But the writer from whom Dr. Fish derives his opinions, says there was a cover, and the marks are still evident where were the lintels—etc.

What royal sarcasm were it not monumental ignorance. The "writer from whom," etc., was Prof. Smyth! And

Col. Vyse, and Perring, (and Caliph Mamoun's fabricator), men whose *lives* are identified with the Pyramid for all time—whose fortunes and homes were sacrificed in the struggle for light! Men with whom no instrument was too costly, or the highest artificial illumination too laborious! Then to see calcium lights and Playfairs and cameræ chased up and down those mysterious galleries by a Boston tourist and a Chicago reporter with a tallow dip! And the same Prof. referred to wrote 18 pages to prove that the coffer had a lid. *Mirabile dictu!* Blind! He will be happy, as Scotland's Astronomer Royal, to hear that a man by the name of Grant*agrees with him.

7. But Dr. Van Rhyn goes further, and declares that the massive sarcophagus contained a wooden coffin in which was the richly decorated mummy of a king. And that this mummy was carried away when the Caliph Mamoun, in the beginning of the 9th century, etc. [See p. 65.]

This is not an absolute fabrication. The tourist mentioned probably had not seen the several hundred other Arabian and Moslem traditions, so gave some credence to this. All writers are probably agreed that it *may* be true. Very few assert that the Pyramid was *not* a tomb.

8. —But which does not contain anything new, or add to what was known before. It is only a compilation, and as such not superior to others.

There being no other "compilations" or compend of more than a pamphlet form, this rub is very unkind. Dr. Seiss's work is a series of grand, non-technical lectures. Mr. Bonwick's a blank collection of approximate ideas and measurements of pyramids and mounds. Our work is the only illustrated—technical—precise compend in the market. It is a clear field. The book is therefore the worst one in existence.

In reply to a letter, Dr. A. K. Frain, an Iowa antiquarian, responded as follows:

* * We are either ignorant of literature on the subject or else it is peculiarly distinct from any work on Egyptian topics. Its analysis of the history, within 30 or 40 pages, is the best I have seen. The inclusion of the 4th dynasty (Cheops) with the Shepherd Kings, and as conquerors of Timaus, is in conflict with other writers, as also the consecutive reigns of Cheopian and Salatian monarchs. Among thoroughly new ideas are: Your views of Philitis; the discovery of the first hieroglyph, and its subsequent translation; the forgery of the "vegetable" inscription given by Herodotus, an item that is of the utmost importance; the duplication of the cube, and farther development of some mathematical points—all

*The reflection is not upon Dr. Grant, whose labors are appreciated, but upon the reviewer who is ignorant of Prof. Smyth's "Life and Work."

constituting a work thoroughly distinct and original. * The reviewer evidently did not read the book, and is somewhat ignorant of the subject. It is only the prominence of the paper that gives it importance.

This review is thus noticed at length, to show how weighty topics may be misrepresented by powerful journals. It is altogether likely that the gentleman in the easy chair remarked to his chance friend, as the book was taken from the dummy, "Here Augustus, review this Egyptian ruin for us before you go. There's a mass of such truck coming out." In about fifteen minutes the i's are all dotted, the t's crossed, and Augustus goes out and takes the sun. Meantime the "other man" reaps this "fruit," for his years of toil and anxiety.

But the reviewers do not all make the task so slight, nor call "Augustus" to their aid.

FINIS.

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